BULLETIN 418 MARCH, 1928

The Apple Industry of Ohio

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OHIO
AGRICULTURAL EXPERIMENT STATION
Wooster, Ohio

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THE APPLE INDUSTRY OF OHIO

CHAS. W. HAUCK

INTRODUCTION

Rapid expansion of the commercial apple industry in certain sections of the United States during recent years, although total production has remained almost stationary, has been followed by declining apple prices. This decline was accentuated by a period of general agricultural depression, in which farmers in the main have suffered more than producers of non-agricultural commodities. As an effect of these dual influences the purchasing power of apples has been low in relation to things the farmer has to buy. These conditions have multiplied the marketing problems encountered by producers. Growers frequently have found it difficult to dispose of the crop at a profit, not only in states where apple-growing is a concentrated and highly specialized industry and in localities where the greatest increase in acreage and yield has occurred, but also in other districts where the orchards are smaller and more scattered, where the agriculture is more diversified, and where apple-growing is declining.

Apple growers everywhere have been searching for some satisfactory means of adjusting production and demand. Apple growing is a long time industry; several years are required to bring new plantings into bearing, and the investment is so large and so permanent that changes in production schedules cannot be made easily nor quickly. Intelligent planning for the future, as in other lines of enterprise, depends upon accurate information. Prospective changes and developments in the apple industry can be forecast only in the light of past experience; consequently the demand for basic information relating to the industry has greatly increased. The present work is an attempt to assemble available statistics pertinent to the production and marketing of apples, particularly insofar as they relate to the problems of the Ohio apple grower and dealer, and to supplement the existing literature on the subject.

These data have been taken largely from the "Yearbook" of the United States Department of Agriculture and from the census reports of the United States Department of Commerce. "Crops and Markets" and other published reports of the United States Bureau of Agricultural Economics also have been drawn upon

freely. Certain phases of the information have been taken from reports of the Bureau of Foreign and Domestic Commerce, and from publications of the Ohio Department of Agriculture and the Ohio Agricultural Experiment Station.

PRODUCTION

THE TREND OF PRODUCTION IN THE UNITED STATES

The growth of specialized producing areas during the last third of a century has been one of the outstanding developments of the apple industry. Apples at one time were produced almost exclusively in small farm orchards, principally for home use. For many years expansion took place slowly and apple-growing, although it ultimately developed into a commercial industry of some consequence, nevertheless long remained scattered. In 1889 only one county in the United States produced as many as a million bushels. By 1899 production had become somewhat specialized in western New York, and by the end of the next decade the large areas in Washington and Oregon had come into prominence.

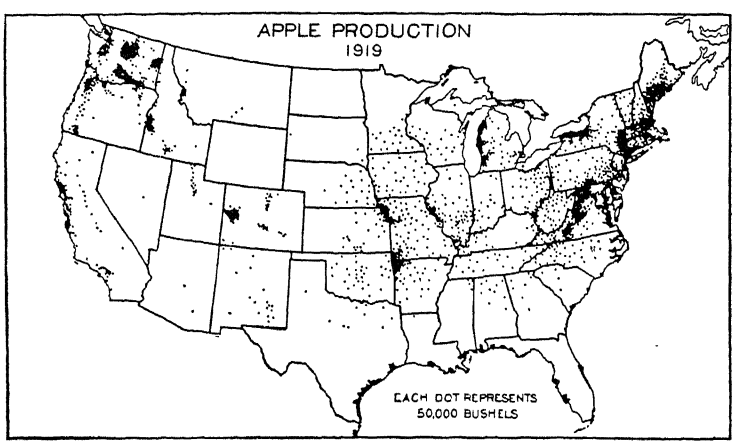

Fig. 1.—Apples are an important crop in many states (From U. S. Dept. of Agriculture Yearbook)

The 1925 agricultural census figures show that Yakima and Chelan Counties, Washington, each produced almost 6,000,000 and Santa Cruz County, California almost 4,000,000 bushels the previous year. Approximately 3,400,000 bushels were produced in the Hood River Valley, Oregon. Orleans and Niagara Counties, New York, each had a production exceeding 2,000,000 bushels, and numerous other counties produced 1,000,000 bushels or more.

This centralization has been accompanied by a conspicuous trend toward commercialization and quality in production rather than by any sustained increase in total quantity. Prior to the record-breaking crop of 1926, total production of apples in the United States had been declining for a quarter of a century. The present large total production, exceeding 200,000,000 bushels in favorable seasons, was fully equalled in exceptional years as far back as 1895 and 1896. The crop of 1921 was the lightest since 1890. Average production for the ten years 1917-1926 was less than the average for either of the decades immediately preceding 1917. Manifestly the rapid gains in the boxed-apple regions were barely sufficient to offset the decline in the East.

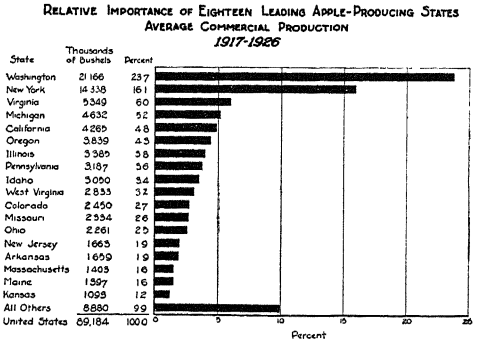

Fig. 2.—In commercial production of apples Ohio ranks thirteenth. All states that had an average commercial production of 1,000,000 bushels or more during the ten-year period 1917-1926 are enumerated separately. States that had an average production of less than this amount are included in "All Others".

The apple crop has fluctuated widely in volume from year to year. Since 1889 the total crop has varied from 80,000,000 bushels in 1890 to 253,000,000 bushels in 1914. The strictly commercial crop in the eleven years that it has been reported separately has varied from 64,000,000 bushels in 1921, when the crop of the southeastern states was virtually wiped out by an April freeze, to 117,000,000 bushels in 1926, when a bumper apple crop prevailed in almost all of the important commercial districts throughout the United States.

The commercial crop, which has been reported separately from total production since 1916, has shown some increase in that time. Commercial apples are those which enter into either domestic or foreign trade as fresh fruit, and do not include apples consumed where grown or used for canning, evaporating, or manufacturing into cider, vinegar, or other by-products. Apples grown in the Yakima Valley in Washington, for example, may be shipped fresh to New York City either for sale and consumption there or for export to various foreign countries; it is these apples that are classed as commercial apples. Commercial orchards have been supplanting the small home orchards all over the United States for some years,

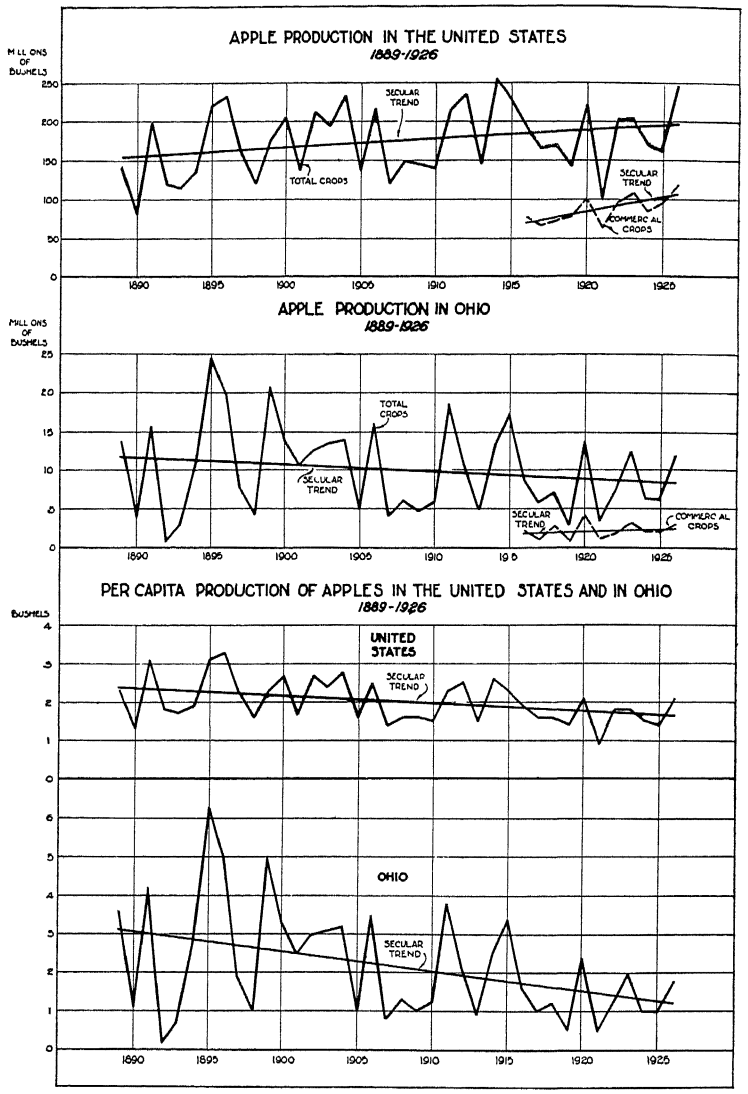

Fig. 3.—The apple crop fluctuates widely from year to year. Commercial production seems to be increasing but per capita production has declined since 1889

and the proportion of first class market fruit has increased along with the more skillful management and better cultural and marketing practice prevailing in commercial orchards. The greater marketability of crops grown and handled under favorable conditions has made it increasingly difficult for the small farm orchard to compete successfully.

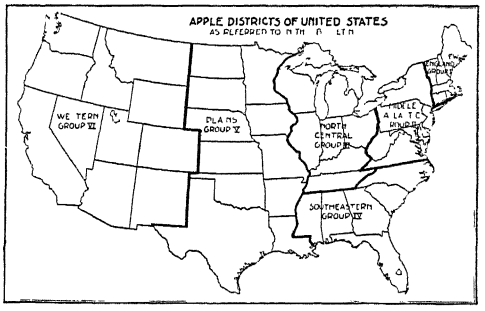

Fig. 4.—For convenience in analyzing production trends the United States has been divided arbitrarily in this study into six groups of states

For convenience in analyzing production trends during the last 35 years the United States has been divided arbitrarily in this study into six groups of states, as shown by the map (Fig. 4). These may be designated as follows:

Group 1.....New England States
Group 2.....Middle Atlantic States
Group 3.....North Central States
Group 4.....Southeastern States
Group 5.....Plains States
Group 6.....Western States

Average annual production of apples in each group of states by five-year periods since 1892 is shown in Table 1 and Figure 5.

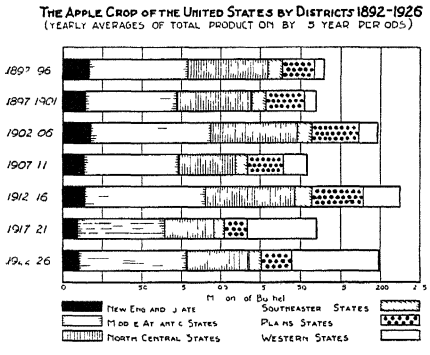

Fig. 5.—The continued increase in apple production in the Western states in the last 35 years is significant

With the exception of Group 6, each group produced a smaller proportion of the total United State apple crop in the last five years than in the five years 1892-1896. Group 6 increased from 3.5 percent in the period 1892-1896 to 27.5 percent in 1922-1926. The continued increase in production in the Rocky Mountain and Pacific Coast states in the last 35 years is significant. Furthermore, in the last decade the rate of increase in this group of states was faster than before, although it now seems to be slowing up. This western crop, speaking generally, is of high quality, comes

from young orchards of excellent market varieties, is skillfully grown, and is graded and packed under rigid requirements. It is marketed largely in boxes, and competes actively with the eastern crop.

TABLE 1.—Production of Apples in United States by Geographical Groupings—Yearly Averages for 5-year Periods, 1892-1926

(In thousands—i. e., 000 omitted)

5-year periods	Group I	Group II	Group III	Group IV	Group V	Group VI	Total U. S.
1892–1896.....	16,599	62,577	50,280	8,725	20,576	5,675	164,432
1897–1901.....	13,633	58,816	46,907	9,512	22,323	8,533	159,724
1902–1906.....	16,800	76,600	54,300	8,968	29,914	12,334	198,916
1907–1911.....	12,712	60,631	35,698	7,716	22,163	15,137	154,057
1912–1916.....	13,730	77,100	56,069	10,365	32,502	23,453	213,219
1917–1921.....	9,506	55,156	30,766	6,624	15,031	43,145	160,228
1922–1926.....	9,712	68,083	40,119	7,736	18,609	54,871	199,130

Ohio apple production fluctuates more than the western production. Since 1889 the eleven Western States, taken collectively, have not suffered as great relative shortages as frequently occur in Ohio. Western production has advanced rapidly and more or less steadily and even in years such as 1890, 1898, 1907, and 1921, when the total United States crop was very short, the western crop either increased or declined only slightly from the level of the preceding year. In these years Ohio production fell off even more rapidly than the total production of the United States.

TABLE 2.—Average Production in Each Group of States in Percentage of Average of United States Production

5-year periods	Group I	Group II	Group III	Group IV	Group V	Group VI	Total U. S.
1892–1896.....	10.1	38.0	30 6	5.3	12.5	3.5	100
1897–1901.....	8.5	36.8	29.4	6.0	14.0	5.3	100
1902–1906.....	8.5	38 5	27.3	4.5	15.0	6.2	100
1907–1911.....	8.3	39.3	23.2	5.0	14.4	9.8	100
1912–1916.....	6.4	36.2	26 3	4.9	15.2	11.0	100
1917–1921.....	5.9	34.5	19.2	4.1	9.4	26.9	100
1922–1926.....	4.9	34.2	20.2	3.9	9.3	27.5	100

Whether this condition be attributable to climatic conditions or cultural practices or both, it provides an illuminating commentary on the competition from western sources that the Ohio apple must face. It cannot be denied that in years of general shortage and high prices a distinct advantage usually lies with the boxed-apple region.

OHIO'S POSITION IN THE APPLE INDUSTRY OF THE UNITED STATES

In total apple production Ohio ranks seventh, and in commercial production thirteenth, among the states, based on the average of the ten years, 1917 to 1926. Naturally the commercial production of any state determines much more than its total production the relative importance of that state. Ohio ranks much lower in commercial production than in total production because a large proportion of the apples are grown in farm orchards and do not enter into the commerce of the country. Only 29.2 percent of the apples grown in Ohio from 1917 to 1926 were commercial.

Twenty-eight states had higher percentages. The average for the entire United States was about 50 percent commercial. In neighboring states, such as New York, Michigan, and Virginia, the commercial part of the crop was approximately 50 percent. In the Pacific Coast states, where apple-growing is a leading enterprise, commercial production constituted about 75 percent of the total crop.

More than 70 percent of Ohio's apple crop each year never is sold as fresh fruit. Most of it is consumed on the farms where grown, or goes to waste, although some, of course, is used in the manufacture of cider, vinegar, applebutter, and other products. There are no complete statistics of the by-products made from apples in Ohio, but the amount is known to be relatively small. There are indications, however, that the manufacture of cider and refined apple juice in this state has been increasing for some time.

The trend of Ohio's apple production since 1889 has been slightly downward. The yearly average total production during the ten-year period 1897-1906 was larger than the average of the ten years 1907-1916, and this in turn exceeded the average of the ten years 1917-1926. The average annual production from 1917 to 1926 was less than two-thirds of the average annual production from 1897 to 1906.

Commercial production of apples in Ohio during the past ten years averaged about 2,250,000 bushels annually, or 2.3 percent of the commercial apple crop of the United States. The trend in this state has been slightly upward during the short period for which records of commercial production are available, but the statistics do not extend over a long enough period to determine by this means alone whether strictly commercial apple-growing in Ohio has increased or decreased over a period of 30 years or more.

In 1925 Ohio ranked seventh among the states in number of bearing apple trees, having fallen from fifth place in 1920 and from fourth in 1910. In non-bearing trees, however, Ohio advanced from ninth place in 1910 to fifth place in 1920, and retained that position

TABLE 3.—Total Production and Commercial Production of Apples by States 10-year Averages, 1917-1926

(Bushels in thousands—i. e., 000 omitted)

State	Total production		Commercial production		Ratio of commercial to total production	
	Bushels	Rank	Bushels	Rank	Percent	Rank
Maine	2,941	20	1,396	17	47.5	21
New Hampshire	1,110	29	528	27	47.6	20
Vermont	890	36	435	28	48.9	17
Massachusetts	2,941	20	1,403	16	47.7	19
Rhode Island	283	40	144	36	50.7	13
Connecticut	1,443	26	556	26	38.5	24
New York	28,796	1	14,338	2	49.8	16
New Jersey	2,460	22	1,663	14	67.6	5
Pennsylvania	10,799	3	3,187	8	29.5	28
Delaware	1,059	31	849	20	80.2	2
Maryland	1,995	24	943	19	47.3	22
Virginia	10,631	4	5,349	3	50.3	15
West Virginia	5,883	10	2,833	10	48.1	18
North Carolina	4,123	12	570	23	13.8	34
South Carolina	628	38	.....	.....	.....	.....
Georgia	1,188	27	277	34	23.3	31
Ohio	7,733	7	2,261	13	29.2	29
Indiana	3,106	17	809	21	26.0	30
Illinois	6,369	8	3,385	7	53.1	11
Michigan	9,165	5	4,632	4	50.5	14
Wisconsin	2,075	23	365	29	17.6	33
Minnesota	1,163	28	158	35	13.6	35
Iowa	2,984	19	564	25	18.9	32
Missouri	5,254	11	2,334	12	44.4	24
South Dakota	194	42	7	41	3.5	40
Nebraska	892	35	329	31	36.9	26
Kansas	1,818	25	1,093	18	60.1	9
Kentucky	3,797	14	358	30	9.4	39
Tennessee	3,197	16	325	32	10.1	38
Alabama	1,071	30	37	39	3.4	41
Mississippi	213*	41	.....	.....	.....	.....
Louisiana	34*	45	.....	.....	.....	.....
Texas	317	39	43	38	13.5	36
Oklahoma	959	32	107	37	11.2	37
Arkansas	3,212	15	1,659	15	51.6	12
Montana	678	37	302	33	44.5	23
Wyoming	33*	46	.....	.....	.....	.....
Colorado	3,063	18	2,450	11	79.9	3
New Mexico	898	34	568	24	63.2	7
Arizona	100	43	34	40	33.7	27
Utah	947	33	570	22	60.1	8
Nevada	44*	44	.....	.....	.....	.....
Idaho	3,867	13	3,050	9	78.8	4
Washington	25,653	2	21,166	1	82.5	1
Oregon	5,970	9	3,839	6	64.3	6
California	7,768	6	4,265	5	54.9	10
United States	182,744	.....	89,184	.....	48.8	.....

*8-year average, 1919-1926.

in 1925. These new plantings have been principally in commercial orchards, whereas the loss in bearing trees has been in farm orchards. Without care and with advancing age trees on general farms are producing less and less. Many have been abandoned or removed and few are being replaced with young trees. It may be expected that when these newer plantings come into full bearing a much larger proportion of the total apple crop in Ohio will be commercial production.

In average carlot shipments for the nine years 1918 to 1926, Ohio ranked fifteenth, even lower than in commercial production.

TABLE 4.—Apple Production in Ohio 1891—1926

(Bushels in thousands—i. e., 000 omitted)

	Total production	Commercial production	
	Bushels	Bushels	Percent
1891—1895 (average)	10,968		
1896—1900 (average)	13,222		
1901—1905 (average)	11,100		
1906—1910 (average)	7,313		
1911—1915 (average)	13,070		
1916	8,600	2,163	25.2
1917	5,760	1,596	27.7
1918	7,005	2,706	38.6
1919	2,976	840	28.2
1920	13,960	4,335	31.0
1916—1920 (average)	7,660	2,328	30.4
1921	3,390	1,080	31.8
1922	7,298	1,824	25.0
1923	12,395	3,099	25.0
1924	6,350	2,082	32.8
1925	6,300	2,024	32.3
1921—1925 (average)	7,147	2,024	28.3
1926	11,900	3,018	25.4
1917—1926 (average)	7,733	2,261	29.2

PER CAPITA PRODUCTION AND VALUE OF OHIO APPLES

During the 38 years since 1889 the population of the United States has increased from 61,000,000 to approximately 117,000,000. During the same period apple production increased very little, so the production per capita has of course decreased. This decline has been more conspicuous in Ohio than in the United States as a whole, partly because of the decreasing production of apples in this state, but mainly because Ohio's population has increased at a faster rate than that of the entire country.

The average rate of total apple production in the United States for the ten-year period 1917-1926 was 1.6 bushels per capita per annum. At this rate Ohio produced, during the same period, enough apples to supply a population of about 4,800,000, or 73 percent of the present population of the state. Calculated on the basis of the strictly commercial crop, the average annual production in the United States during the last ten years has been .82 bushel per capita. Commercial production in Ohio during this period was sufficient to supply a population of approximately 2,750,000, or only 42 percent of the present population. The average per capita production in Ohio from 1917 to 1926 was 1.3 bushels total and .37 bushel commercial.

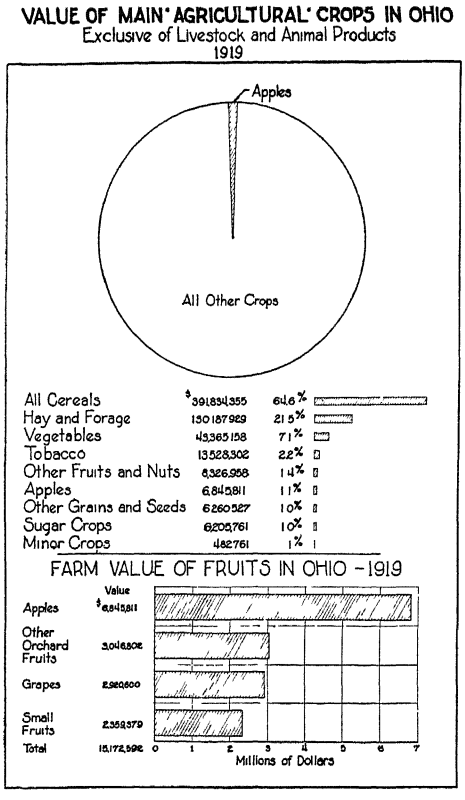

Fig. 6.—Apples make up only a small part of the total value of Ohio's crops, but are worth about as much as all other fruits combined. (From U. S. Bureau of the Census, 1920)

The census of 1920 gives the total value of agricultural crops (exclusive of livestock and animal products) in Ohio in the previous year as $607,037,562. In that year the total crop of apples in Ohio was valued at $6,845,811, or 1.1 percent of the total crop value. Apples made up 45.1 percent of the value of all the fruits grown in Ohio in 1919 (Fig. 6).

The annual gross income from the farm sale of Ohio apples since 1919 has been estimated[1] to be as indicated by the figures on page 13.

[1]Estimated by V R Wertz This estimate of gross income should not be construed as a measure of the growers' profits Production and marketing costs had to be met out of gross income and often these costs were greater when the crop was large Profits were not always proportionate to gross income

1919-20	$ 3,615,000
1920-21	9,026,000
1921-22	3,666,000
1922-23	5,089,000
1923-24	6,968,000
1924-25	4,155,000
1925-26	4,399,000
1926-27	5,770,000
Total	$42,688,000
8-year average	5,336,000

The gross income at the farm generally was higher in years when the crop was large and lower when the crop was small.

RELATION BETWEEN TOTAL AND COMMERCIAL PRODUCTION

From 1916 to 1926 a somewhat significant relationship existed between the size of the apple crop in any year and the percentage estimated as commercial in that year.[2] In years of light production the percentage of commercial fruit usually was greater and in years of heavy production smaller than average.[3]

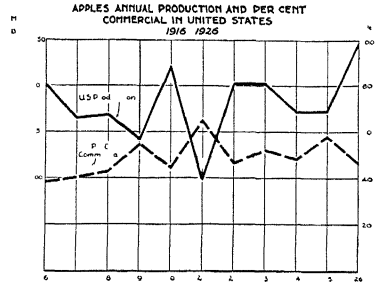

Fig. 7.—The percentage of the apple crop estimated as commercial usually bears an inverse relationship to the size of the crop

The average annual production of apples in the United States during the ten years 1917-1926 was about 180,000,000 bushels, and the commercial production averaged 48.8 percent of the total crop. Ohio's apple crop during the same period averaged about 7,750,000 bushels, of which only 29.2 percent was commercial. This percentage has not consistently increased during the last ten years, although it is generally conceded that Ohio farm orchards are gradually being abandoned or converted into commercial orchards, and that as a result the commercial crop is slowly becoming a larger percentage of the total.[4]

TREES AND VARIETIES

APPLE TREES IN THE UNITED STATES AND IN OHIO

The production of apples varies greatly from year to year on account of weather conditions and the tendency of trees in many localities to produce only one crop in two years. Consequently, in comparing one year with another and one state or district with

[2]The Pearsonian coefficient of correlation between total production and percent commercial during the eleven years 1916 to 1926 is — 58

[3]See also discussion on page 33.

[4]See also discussion on page 20

another, the number of trees of bearing age is on the whole a better index of the general changes or tendencies in the apple industry than the quantity of fruit produced. The number of trees not of bearing age also gives a good indication of probable future production.

The census data on apple trees collected prior to 1910 are not strictly comparable with the enumerations made in 1910, 1920, and 1925. Non-bearing trees were not reported prior to the 1910 census. The schedules of the 1900 census called for reports of "trees of bearing ages", while those of the census of 1890 called for reports of "bearing trees". This difference doubtless accounts for a part of the increase in the number of apple trees reported in 1900. The Bureau of the Census states that many enumerators in 1900 appear to have understood by "bearing trees" those which actually produced fruit in 1899 in considerable quantity, and omitted all trees of bearing age that did not bear in 1899. Where there was a partial crop failure the reports of trees in orchards were the least perfect, so it is doubtless true that the figures reported in that year are incomplete as a record of "trees of bearing age".

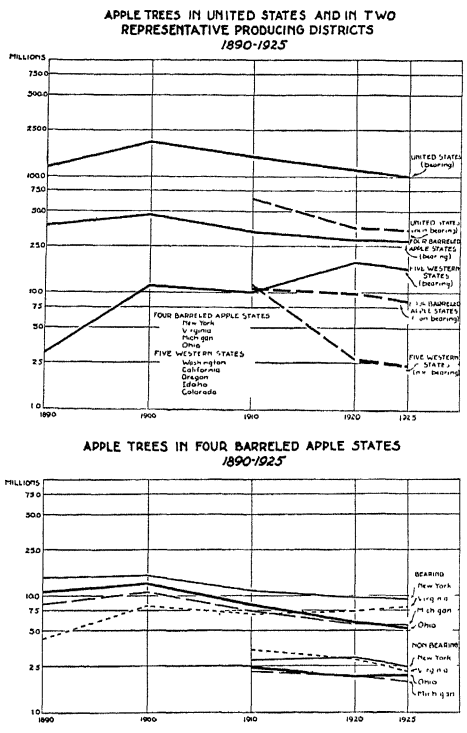

Fig. 8.—New plantings increased in Ohio from 1920 to 1925 while falling off in New York, Virginia, and Michigan

On the other hand, the enumerators in 1900, in some sections, included young trees that had not yet begun to bear fruit. Thus it is evident that on the basis of classification employed in the censuses of 1910 and later, the 1890 figures of bearing trees are too low and those of 1900 too high. This fact should be kept in mind in interpreting Figures 8 and 9.

The number of bearing trees in the United States has been declining since 1900. The rate of decline has been about the same in Ohio and neighboring states as in the United States as a whole. In the great apple regions of the Nothwest, however, the number of bearing trees increased between 1910 and 1920, resulting from heavy plantings prior to and immediately following 1910. New plantings declined in the Northwest from 1910 to 1920 faster than in Ohio and neighboring states. Since 1920, the number of new plantings has continued to decline in the United States, although the rate of decline has been much less than in the preceding decade.

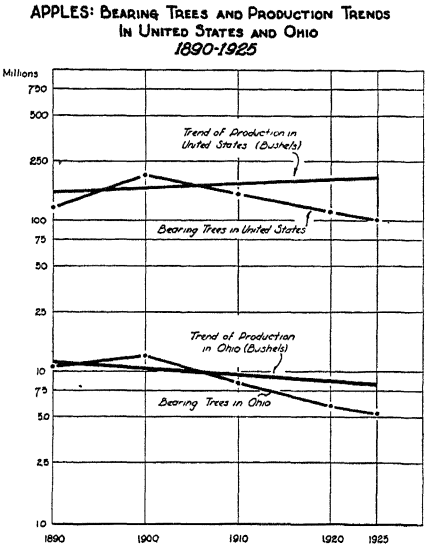

Fig. 9.—Ohio has taken little part in bringing about the greater production per tree attained in the country as a whole during the last 25 years. Ohio's production declined almost as rapidly as the number of bearing trees

The number of bearing trees in Ohio decreased from 1900 to 1925 more rapidly than in New York, Michigan, or Virginia. Ohio now has fewer bearing trees than any of these states. It is the only one of the four, however, whose new plantings since 1920 have not declined, so in a few years bearing trees in this state may be more numerous than in some of the others.

The total number of apple trees in the United States in 1925 was about 8 percent less than in 1920 and 36 percent less than in 1910. In Ohio the decline was almost as great, the number of trees in 1925 being 7 percent less than in 1920 and 32 percent less than in 1910. During the five years following 1920, the number of trees of bearing age in the entire United States declined 10 percent, and in Ohio 11 percent. New plantings, that is, non-bearing trees, decreased 4 percent in the United States, and remained practically the same in Ohio. In the fifteen years following 1910 the number of trees of bearing age decreased 32 percent in the United States and 37 percent in Ohio. Non-bearing trees decreased 47 percent in the United States, and 15 percent in Ohio.

Although the number of trees has been growing less, the relationship between bearing trees and apple production in the entire United States has so changed in recent years that the annual crops have remained about the same as formerly. Ohio's production has been declining at about the same rate as the number of bearing trees. Clearly Ohio has taken little part in bringing about the greater production per tree attained in the country as a whole. Evidently the shift from farm orchards to commercial plantings has not been so pronounced in Ohio as in the country at large.

TABLE 5.—Apple Trees in Eighteen Leading Apple Producing States 1910, 1920, 1925*

(In thousands—i. e., 000 omitted)

State	1910		1920		1925	
	Not bearing age	Bearing age	Not bearing age	Bearing age	Not bearing age	Bearing age
Washington	4,863	3,009	756	7,964	1,050	6,766
New York	2,829	11,248	2,932	9,636	2,422	9,469
Virginia	3,436	7,005	2,857	7,385	2,273	8,011
Michigan	2,253	7,534	2,050	5,616	1,871	5,545
California	1,054	2,483	1,144	3,128	886	3,540
Oregon	2,241	2,029	500	3,315	258	2,773
Illinois	2,548	9,901	1,826	5,113	2,637	4,129
Pennsylvania	2,501	8,000	2,628	6,989	2,078	6,726
Idaho	1,539	1,006	144	2,381	128	1,761
West Virginia	2,772	4,570	1,735	5,555	1,361	5,480
Colorado	1,973	1,688	183	1,778	84	1,390
Missouri	3,625	14,359	1,586	5,163	1,791	3,679
Ohio	2,438	8,505	2,048	5,970	2,075	5,354
New Jersey	519	1,054	811	1,150	827	1,422
Arkansas	3,940	7,650	877	4,075	1,681	2,696
Massachusetts	356	1,367	792	1,219	757	1,402
Maine	1,045	3,476	512	2,833	435	2,442
Kansas	1,116	6,929	618	1,508	685	1,122
All others	24,743	49,506	12,195	34,531	11,504	30,146
United States	65,792	151,323	36,195	115,309	34,805	103,854

*U. S. Bureau of the Census.

In 1925 an enumeration of the commercial orchards and vineyards in Ohio was made by the Cooperative Crop Reporting Service under the direction of the Department of Agriculture of the State, and the report of this study has been published as a special bulletin, "Ohio Commercial Orchards and Vineyards".

As stated in that publication:

For the purpose of this survey or census, a commercial orchard was distinguished from a farm orchard by noting whether proper care was given to the orchard; whether the orchard was maintained primarily for the sale of its products or merely as a collection of trees receiving no special attention and no special effort made to market the product profitably. In some sections, as in parts of northern Ohio, a dividing line was drawn at 100 trees, but in general the intent and purpose were the deciding factors. Ordinarily it was not a matter of difficulty for the enumerator in the field to decide whether an orchard should be classified as commercial."

A total of almost 1,500,000 apple trees was reported. The trees in commercial orchards constituted one-fifth of the total number in the state as reported by the United States Bureau of the Census in 1925. The number of bearing and non-bearing trees in Ohio by counties in 1925 is given in Table 12 and the relative importance of the leading apple-growing counties is shown in Figure 10.

APPLE TREES IN LEADING APPLE-PRODUCING COUNTIES IN OHIO
1925

County	Non-Bearing Trees	Bearing Trees	Total Trees
Lawrence	154069	415188	569257
Columbiana	104672	140836	245508
Washington	70371	152516	222887
Gallia	49897	154575	204472
Stark	56972	126168	183140
Scioto	64743	100404	165,147
Jackson	59892	100771	160663
Belmont	52687	102923	155610
Meigs	35112	120381	155493
Ross	42493	102637	145130
Ashtabula	51029	89123	140152
Clermont	46277	92932	139209
Mahoning	62004	73533	135537
Lorain	59547	75086	134633
Athens	32401	98637	131038
Ottawa	46571	83333	129904
Wayne	40734	87089	127823
All Others	1045867	3237957	4283824
Total	2075338	5354089	7429427

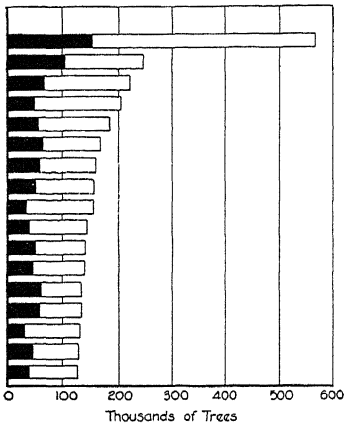

Fig. 10.—All counties that had 125,000 apple trees or more in 1925 are enumerated separately. Counties that had fewer than this number are included in "All Others"

The leading apple-growing districts of Ohio are outlined roughly in Figure 11. Only a few counties in this state are important in the production of commercial apples. The commercial orchards are located mainly in the southeastern part of the state, bordering the Ohio River. Washington, Meigs, Gallia, Lawrence, Jackson, and Ross are leading apple-shipping counties in this part of Ohio. There are smaller districts in Columbiana County and in the counties bordering Lake Erie, and a few commercial apple orchards are scattered elsewhere in the state.

VARIETIES OF APPLES IN OHIO ORCHARDS

Approximately 10 percent of the apple trees in the commercial orchards in Ohio are of summer varieties—Yellow Transparent, Wealthy, and Duchess being the leading kinds. The remaining 90 percent is made up of fall and winter varieties, of which Rome

Beauty, Baldwin, Ben Davis, Stayman, Delicious, Grimes, and Jonathan make up the greater part. Rome Beauty constitutes almost 30 percent of the trees in Ohio's commercial apple orchards.

Fig. 11.—The commercial apple orchards in Ohio are located mainly in the southeastern part of the State and in a narrow belt bordering the Lake

Southern Ohio is the only eastern region where Rome Beauty is the leading commercial variety. In the northern part of the state the conditions and varieties are much the same as those of western New York and Michigan.

The following extract from Bulletin 385, Ohio Agricultural Experiment Station, gives information about the bearing ages of the leading varieties of apples under Ohio conditions:

> The age of a tree when the first fruit is produced is not so important as is the length of time required for the tree to reach an age when a crop of commercial importance is produced. The production of a few scattering apples on a young tree is [of little importance commercially].

An attempt is made in the following tabulation to classify some of the varieties into three general groups, according to the age at which they come into commercial bearing [under conditions prevailing at the Experiment Station at Wooster]. Obviously, however, no such arbitrary standard can be definitely fixed. These groups are: first, those varieties which are likely to produce a crop of at least half a bushel eight years from planting or earlier; second, those varieties which, as a rule, reach production between eight and twelve years from planting; and third, those varieties which do not reach profitable production in less than twelve years from planting.

TABLE 6.—Age at Which Apple Varieties Have Reached Bearing at Wooster

8 years or less from planting	9 to 11 years from planting	12 years or more from planting
Baltimore	Arkansas	Liveland
Bayard	Baldwin	Northern
Ben David	Banks	Oliver (Senator)
Ben Hur	Blenheim	Rhode Island
Black Ben	Boiken	Yellow Newton
Hubbardston	Delicious	York Imperial
Jonathan	Fameuse	
King David	Grimes Golden	
Milwaukee	McIntosh	
Oldenburg	Mother	
Stayman	Nottingham	
Wealthy	Red June	
Winter Banana	Rome Beauty	
	San Jacinto	
	Summer Rambo	
	White Pippin	
	Winesap	

RELATION BETWEEN BEARING AND NON-BEARING TREES

Under conditions prevailing in Ohio the leading apple varieties in commercial orchards may be expected to come into bearing at about 8 years of age on the average and to decline from profitable production at 35 to 40 years. For each 100 trees it is necessary to have about 20 to 25 trees of non-bearing ages in order to replace the old trees as they go out of production. Thus to maintain a commercial orchard of given size the ratio of non-bearing trees to total trees should be about 2 : 9 or 2 : 10, or about one-fourth as many non-bearing trees as bearing trees.

These figures represent average commercial conditions. They vary with the variety, with the locality, and with the skill of the orchardist. Moreover, trees in farm orchards on the whole fail in productivity earlier than in commercial orchards (say at 25 years on the average), so the ratio of non-bearing trees to total trees needed to maintain a farm orchard of given size is necessarily greater than in commercial orchards, or about 2 : 6 or 7, or almost one-half as many non-bearing trees as bearing trees. Since about

four-fifths of the apple trees in Ohio are in farm orchards and only one-fifth in commercial plantings, the average ratio for the state would be around 2 : 7, or the trees of non-bearing age would be 28 percent of the total.

If the percentage in the state is much greater than this it may be taken as an indication that recent plantings have been more than sufficient to replace the old trees as they become unproductive; or that the number of bearing trees has been falling off faster than the number of non-bearing trees, and that, in spite of the high ratio, apple-orcharding may have been declining for some time. In any event, if the percentage is much greater than 28 percent it is reasonably safe to conclude that apple-orcharding will make some expansion from its present status in the near future; if the percentage is smaller, apple-orcharding will decline.

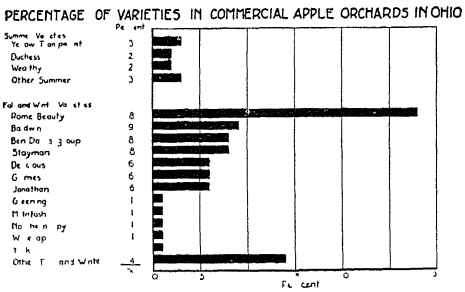

Fig. 12.—The division between Summer and Winter varieties is placed somewhat arbitrarily to include all varieties ripening with Grimes and later in the Fall and Winter class and all ripening before Grimes in the Summer class. Rome Beauty makes up more than one-fourth of the trees in commercial apple orchards in Ohio. (From Ohio Dept. of Agriculture Special Bulletin, "Ohio Commercial Orchards and Vineyards")

The recent state enumeration of the trees in commercial orchards showed more than 46 percent ten years of age or younger. At the time of the last tree census in 1925, non-bearing trees made up 27.9 percent of the total apple trees in Ohio. This percentage had risen from 25.5 percent in 1920 and 22.3 percent in 1910; but this change was due primarily to a marked decline in the number of bearing trees, while little change was taking place in the number of non-bearing trees. In 13 of the 17 counties in Ohio that had 125,000 apple trees or more at the time of the 1925 tree census, more than 28 percent of the total consisted of non-bearing trees. In three of these counties they exceeded 40 percent of the total. In 1910 the ratio was greater than 28 percent in only eight of these counties. It seems reasonable to conclude, therefore, that the decline that has taken place in recent years is about arrested, and even that some increase in certain localities may be expected.[5] Judging from the relationship between bearing and non-bearing

[5]See also page 13

trees reported in 1925, apple orcharding is declining in 54 counties, is about stationary in 11, and is increasing in 23. Thus the industry is becoming not only more commercialized but also more localized. This can scarcely fail to have its effect on the quality of the apples grown in this state. Doubtless as these younger commercial plantings come into bearing fewer cull apples and more of the desirable grades will be produced.

A number of reasons have been advanced for the decline in apple production and for the even more conspicuous decrease in the number of trees in recent years, at a time when commercial production has been on the increase. Probably the explanation suggested by the U. S. Bureau of Agricultural Economics represents the consensus of informed opinion:

> During the war relatively few fruit trees were planted, and there was heavy mortality in old orchards. In Eastern and Central states most of the decrease has been in scattered orchards that are either outside of the main commercial sections or are too small or too unproductive to justify the use of efficient spraying equipment. Some unproductive orchards also have been abandoned in the boxed-apple states, and the tendency has been to replace the poorer varieties in the older orchards. Therefore the decline in the total number of trees is not reflected in a corresponding decrease in the production of commercial fruit.
>
> So far as commercial production is concerned, the decrease in the number of bearing trees in the scattered farm orchards has been more than offset by increased production in the commercial sections. The rate of increase in the commercial sections seems, however, to be slowing up, and in the boxed-apple states the point of maximum production seems to have been nearly reached.
>
> Looking ahead, it seems that the yearly increase in population will be sufficient to take care of such increase in production of commercial apples as is to be expected from present orchards. A continuing increase in the volume of both oranges and grapefruit may be expected which makes the outlook unfavorable for additional apple plantings for some time. The apple industry is approaching a more stabilized condition. The number of trees not yet bearing is not sufficient to maintain the present number in bearing, but commercial plantings are hardly justified at present except where local production or market conditions are unusually favorable.

INTERNATIONAL TRADE IN APPLES

The total production of apples in countries for which statistics are available is around 368,000,000 bushels annually. The United States, Canada, and Australia, in the order named are the most important commercial apple producing countries, the United States leading in both total and commercial production.

The commercial crop in the United States during the five years 1922 to 1926 averaged approximately 100,000,000 bushels a year, or

about 50 percent of the average yearly total production. The United States Department of Commerce states:[6]

> The commercial production of apples in Canada is around 13,500,000 bushels a year, or 79 percent of the approximate total yearly production [of around 17,500,000 bushels]. The yearly production of apples in Australia approximates 6,250,000 bushels a year, but in view of the fact that exports from Australia average 1,500,000 bushels a year, also that the population is small, it is probable that 3,000,000 bushels a year may be considered as a fair approximation of the yearly commercial apple crop of Australia.

Exports of apples from the United States have increased substantially in recent years. In 1921, 1923, 1924, 1925, 1926, and again in 1927 apple exports exceeded the exports in any year prior to 1921. In 1924 the United States exported approximately 12,300,000 bushels of apples as compared with some 8,000,000 bushels in 1921 and 4,300,000 bushels a year during the five years 1909 to 1913. Thus it may be seen that in 1924 exports were 50 percent larger than in 1921 and about three times as great as the average yearly exports from 1909 to 1913. In 1926 they were almost as large as in 1924, and in the twelve months from July, 1926 to June, 1927, apple exports reached the unprecedented figure of 21,293,000 bushels, much larger than in any previous year.

Again quoting the United States Department of Commerce:

> Canada, whose average yearly apple exports during 1909 to 1913 of around 3,700,000 bushels of apples were but 500,000 bushels a year less than those of the United States, exported 4,000,000 bushels in 1921 and 5,000,000 bushels in 1924—an increase of 25 percent. Australia, with average yearly exports during 1909 to 1913 of 1,000,000 bushels and 872,000 bushels in 1921, is now exporting around 2,000,000 bushels of apples a year. None of the other apple-exporting countries appear to have increased foreign shipments to any great extent.

Ohio ranks low in volume of apples exported to foreign countries. The United States Bureau of Foreign and Domestic Commerce states that during the calendar year 1925 the exports of apples reported as originating in this state amounted to 261 boxes (bushels) valued at $811, and during the first six months of 1926 to 72 boxes valued at $78 and 168 barrels valued at $697, or a total of 576 bushels valued at $775. A few other shipments are known to have been exported that were not credited to Ohio, due possibly to diversion or storage en route. Manifestly Ohio's apple industry has played a negligible role in our international trade, yet anything which affects the world markets for apples can scarcely fail to be reflected in the price and movement of Ohio-grown fruit.

[6] "International Trade in Apples", Commerce Report, U. S Dept. of Commerce, July 26, 1926.

Germany and the United Kingdom are the principal apple importing countries, the latter having in recent years assumed the lead held by Germany before the World War. In the United Kingdom the principal competition with American apples comes from the Canadian crop, which is exported during the same season (from October to March) as United States apples, and from Australian apples, which ordinarily reach the United Kingdom about the first of April, overlapping the season of United States apples. A short crop in either of these countries will afford an opportunity to increase the exports of apples from the United States to the United Kingdom.

Germany takes most of her apple imports from other central European countries. With normal crops in these countries, combined with German production, the United States exporter of apples has little opportunity until after the Christmas holidays for sale in German markets.

STORAGE OF APPLES IN OHIO

In cold storage facilities Ohio ranks well up among the states. In 1925, 92 concerns were operating cold storage warehouses, either public or private, in this state, as reported by the United States Bureau of Agricultural Economics.[7] In this respect Ohio was exceeded only by New York with 180 concerns and by Pennsylvania with 108. In total refrigerated space Ohio ranked ninth, with more than 23,000,000 cubic feet, or 3.7 percent of the total in the United States, but in terms of space held at 30 to 44 degrees Fahrenheit, temperatures prevailing in fresh fruit storage, Ohio ranked sixth, with more than 19,000,000 cubic feet, or 4.1 percent of the total in the United States.

Many apples are stored in Ohio each season. No figures are available showing the amount of storage space for apples on farms; and very little, if any, storage space in public warehouses is devoted exclusively to this one commodity, but practically all public storage plants carry apples to some extent at various times of the year. They devote as much space to such holdings as the size of the crop and business considerations warrant.

In addition to apples from Ohio orchards much fruit from other states is stored in Ohio. The advantageous location of the state in relation to areas of dense population and facilities for distribution

[7]Each operator of a cold-storage warehouse, whether public or private, who stores apples, pears, frozen and preserved fruits, dairy products, eggs, poultry, frozen and cured meats, and lard is requested to mail to the bureau a complete report of holdings of such commodities on the first business day of each month.

throughout these eastern and southern consuming sections make it a desirable base for distribution. Cincinnati is a notably important diversion point and gateway to the south and east, and Cleveland to an extensive fan-shaped area to the east of that city. Shippers in western states use the storage facilities in these and other cities to a considerable extent for apples that are later sold partly in Ohio and partly for shipment to markets in other states.

The cold storage holdings of apples in Ohio, 1919 to 1926, are enumerated in Table 15. No distinction can be drawn between Ohio apples and apples from other states in this tabulation, as warehousemen do not report them by states of origin, but it may be assumed that most of the boxed apples were from western states and a considerable part of the barreled apples were from states other than Ohio, notably Missouri, Illinois, Michigan, and West Virginia.

DISTRIBUTION

FREIGHT RATES

The distance from shipping point to market has an important bearing on transportation costs, yet many of the apples consumed in Ohio are grown in the western boxed-apple regions and travel some 2000 miles by rail to compete successfully with Ohio-grown fruit.

Western apples are sold principally in the eastern half of the United States where population is dense. Due to the heavy transportation charges to eastern markets, only well-grown, properly graded, and carefully packed western apples can be sold at a profit, even under favorable market conditions. Consequently only the better grades of western apples are offered in these markets as a rule, and this high-class fruit provides severe competition for locally grown apples.

Ohio is located in what is known, from the standpoint of our freight rate structure, as "trunk line territory". This territory embraces, roughly, the area north of the Ohio and Potomac Rivers and east of the Mississippi River, but not including Wisconsin nor the upper peninsula of Michigan. The characteristic feature of the trunk line rate system at the time of its adoption in 1876 was the recognition of distance as the primary factor in rate making, and, despite subsequent modification and adjustments, it still retains this feature as fundamental. The theory on which this system was founded is that the cost of transportation increases with the distance, although not, of course, in exact proportion thereto. In general, therefore, as the distance increases between any shipping point in this territory and destination, the rate also increases.

The western apple producing states, on the other hand, are located in "transcontinental rate territory". One of the characteristic features of the transcontinental rate system is the blanketing of the southwest and the territory east of the Mississippi River on shipments from the Pacific Coast. Apples from points in California, Oregon, Idaho, and Washington thus take the same rate on shipments to all eastern and southern markets, regardless of their distance from the point of origin. This "postage stamp" rate enables the shipper to avail himself of the diversion privilege, and puts all eastern and southern markets on an equal basis in securing western apples insofar as the rate is concerned. It encourages wide distribution from western states and permits the shipment of apples from these surplus producing districts into the densely populated consuming areas of the east.

Apples from New York State, also located in trunk line territory, make up a substantial proportion of the receipts in Ohio markets. Rates from representative shipping points in New York are somewhat higher to Ohio cities than rates to these same cities from Ohio points, but the difference is not great enough to prohibit shipments into Ohio.

Tables 16 and 17 give the freight rates on apples from representative points of origin outside of Ohio to four important Ohio markets, and from a number of Ohio shipping points to various markets both within and without the state, in which Ohio apples are sold. These rates are for direct movement by all-rail routes and do not include additional charges or expenses incident to reconsignment, refrigeration, etc., which vary according to the additional services required by the shipper. They apply to carlot shipments only, and are all expressed in terms of dollars per hundred pounds.

SHIPMENTS AND UNLOADS

Most Ohio apples are marketed within the state. The principal outside markets for Ohio apples are Detroit, Louisville, and Pittsburgh, and even if Ohio produced a surplus of apples distribution doubtless would be limited more or less to nearby cities. In the main, however, apples produced in the United States have widespread distribution, and competition is active between apples from different producing areas. This is indicated by Table 18, showing the number of states from which each of 66 cities received rail shipments of apples in 1926, as reported to the United States Bureau of Agricultural Economics.

New York City, the largest of the apple markets, received its apples from 21 different states, and Chicago, second in number of cars unloaded, received shipments from 25 states. Most of these 66 cities, with the exception of those located in or near surplus producing areas, received apples from 10 states or more. In Ohio, Cincinnati received shipments from 17 states, Cleveland from 19, Columbus from 14, and Toledo from 18.

The only available measure of the quantity of apples used in any of the cities in Ohio is the number of carlots unloaded. Rail shipments received and unloaded in several of the larger cities of the state are reported daily by the railroad agents to the United States Bureau of Agricultural Economics.

There are no dependable records of the supplies brought into these cities over the highways, yet considerable quantities of Ohio-grown apples are moved to market each year by means of wagons and motor trucks and from the farms by city consumers direct. How much, no one can say definitely, but wherever the highways are good and the hauling distance not prohibitive, the amount so moved often makes up a substantial part of the total. Besides the apples hauled to market, many producers sell all or part of their crops each year at the orchard to truckers or at roadside stands direct to consumers, and, although many of these transactions are small, in the aggregate they amount to a considerable volume. None of these appear in the records of rail shipments.

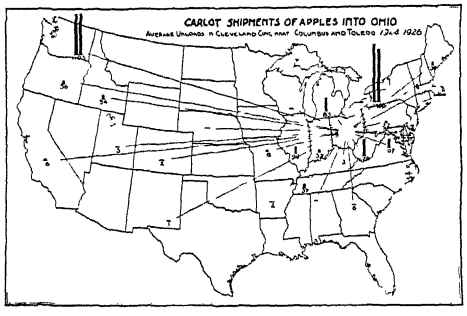

Fig. 13.—More apples are shipped into Ohio by New York and Washington than by all other states combined

The State of New York leads in volume of apples shipped by rail into Ohio, if the average carlot unloads in Cleveland, Cincinnati, Columbus, and Toledo during 1924, 1925, and 1926 can be taken as representative. An average of 1466 cars of apples from New York shipping points were unloaded in these four cities annually. Washington was second, originating 1070 cars. These two states supplied 66.4 percent of all the carlots of apples unloaded in the four markets. Ohio was third with 269 cars, or 7 percent. West Virginia, Michigan, Virginia, and Illinois, in the order named, supplied most of the remainder.

It is clear that these cities rely mainly upon sources outside of the state for rail shipments of apples. Cleveland and Cincinnati received only about 2 percent of their carlot shipments from Ohio points, a smaller proportion than either of the other two cities.

TABLE 7.—Carlot Unloads of Apples in Four Ohio Cities (3-year average, 1924-1926)

State of origin	Cleveland	Cincinnati	Columbus	Toledo	Total in four cities
	Cars	*Cars*	*Cars*	*Cars*	*Cars*
New York	724	537	116	89	1466
Washington	571	349	76	74	1070
Ohio	37	30	175	27	269
West Virginia	71	55	94	6	226
Michigan	28	76	3	77	184
Virginia	38	58	6	5	107
Illinois	37	44	7	11	99
All other	140	186	46	26	398
Total	1646	1335	523	315	3819
Percentage from Ohio.	2.2	2.2	33.5	8.6	7.0

This was due partly to the much larger total number of cars unloaded there than in Columbus or Toledo, and partly to the fact that the actual number of cars of Ohio apples shipped to Cleveland and Cincinnati was small. Toledo took almost as many cars from Ohio as

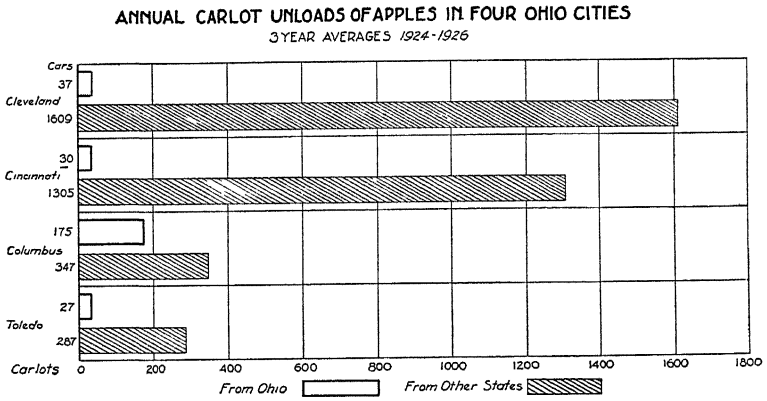

Fig. 14.—The four largest cities in Ohio rely mainly upon other states for rail shipments of apples

either Cincinnati or Cleveland, despite their greater size, and Columbus took a considerably larger number than any of the others. More than 33 percent of the carlot receipts of apples in Columbus were from Ohio points, due, no doubt, to the fact that Columbus is

not far from the apple-producing region of southeastern Ohio and yet is not near enough to encourage heavy truck shipments. Of course, if receipts via the highways could be included, not only would the total receipts be increased materially but Ohio-grown apples would assume a relatively larger place.

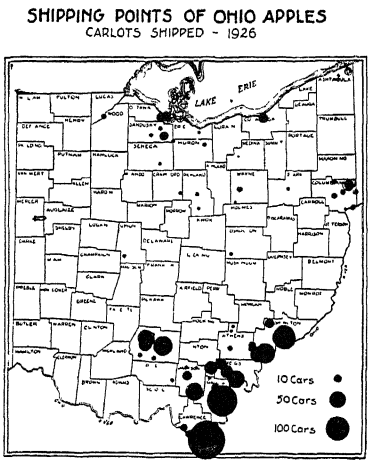

Fig. 15.—Most of Ohio's carlot shipments of apples originate in the southeastern part of the State

The changing character and greater marketability of the apple crop in recent years is reflected by the increase in carlots shipped annually since 1918. In 1918 fewer than 70,000 carlots of apples were shipped by rail in the United States. By 1923 the rail movement had increased to more than 131,000 cars, and has not fallen below 112,000 cars in any year since 1923. Ohio shipped 448 cars in 1918. Shipments increased to 947 cars in 1923, and since that year have exceeded 1000 cars annually.

Carload shipments of apples from Ohio points by months for the seasons 1918-19 to 1925-26 are shown in Table 20. The peak movement occurred in September, October, and November, almost one-half of the yearly shipments being made in October and more than three-fourths in the three months.

Destinations of carlot shipments of Ohio apples for the calendar years 1918 to 1926 are given in Table 21. From 1918 to 1922, inclusive, reports were received from 12 cities; from 1923 to 1925, from 36 cities; and since May 1, 1926, from 66 cities. The distribution of shipments from Ohio during 1926 is shown in Figure 16. Although a few shipments were made to points as distant as Houston, New Orleans, Tampa, Jacksonville, and Boston, 78.3 percent of the Ohio shipments reported in 1926 were unloaded in Ohio markets, and 91.1 percent in Ohio and in Detroit, Louisville, and Pittsburgh.

LOCAL MARKETING

The agricultural census of 1925 reported that the farm population in Ohio in that year made up a scant 16 percent of the total population of the state, whereas in the United States as a whole the

farm population exceeded 25 percent of the total. Thus about 84 percent of the people in Ohio do not live on farms—they are consumers, not producers, of agricultural products. Moreover, the population in Ohio is relatively dense as compared with that of the 17 other leading apple states. The population in 1925 was 158.8 per square mile, greater than in any of these states except New York, Pennsylvania, New Jersey, and Massachusetts.

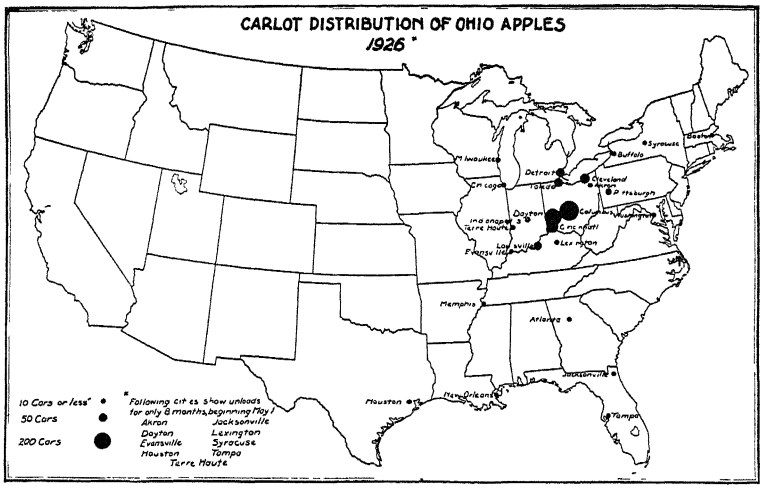

Fig. 16.—Very few cars of Ohio apples leave the State

With a per capita production of apples substantially less than in the United States as a whole, and very much smaller than in some of the competing apple states which are forced to ship their surplus many miles to market, it is evident that the state constitutes a deficit area in apple production. These factors have an important bearing on the opportunity for marketing the local apple crop within the state.[8]

We have seen that in carlot shipments of apples for the nine years 1918 to 1926, Ohio averaged 753 carlots annually. This fact throws some light upon the relative amount of local marketing done in this state. It is significant that, with a commercial production about equal, Ohio shipped annually only 753 cars of apples while Missouri shipped 2175, Colorado 2940, and West Virginia 3972.

[8]Counties in which good road development has been slow and in which truck and automobile registrations are relatively small are handicapped in taking advantage of this opportunity. The Southeastern Ohio apple district has fewer miles of improved roads and fewer automobiles and trucks than other apple growing sections of the state. It will be noted that this district originates most of the carlot shipments.

More than three-fourths of the carlot shipments from Ohio points during 1926 were unloaded in Ohio markets. We may assume that in addition practically all of the truck shipments were marketed locally. It may be seen that only a very small proportion of Ohio's apple crop is consumed outside the state.

Ohio's commercial crop averaged 2,335,000 bushels during the nine years 1918 to 1926. At 525 bushels to the car this amount represents 4448 carlots. During these years annual carlot shipments from Ohio points averaged 753 cars, or about 17 percent of the commercial crop. The remaining 83 percent was marketed by other means, including hauling by trucks, automobiles, and wagons, sale at roadside markets, conversion into by-products, etc.[9]

The large and constantly increasing number of automobiles in Ohio gives some indication of the purchasing ability of Ohio people. The ever-growing mileage of improved roads affords facilities to Ohio truckers and consumers for visiting orchards and roadside markets. The registration of automobiles and trucks in Ohio in 1926 was 1,480,489, an increase of 143 percent since 1920. Registration of strictly commercial vehicles rose from 80,787 to 184,834, an increase of 129 percent. During the same period the mileage of hard-surfaced and macadam roads in the state increased from 19,124 miles to 42,815 miles, a growth of 124 percent in six years.

These advances have been accompanied by a marked development of truck and roadside marketing in Ohio, although statistics are not available to measure this development quantitatively. It is hoped that in the near future a study of these types of marketing may be undertaken, that definite information may be secured regarding their past and present status, and conclusions drawn regarding their future possibilities.

PRICES

RELATION BETWEEN PRICE AND PRODUCTION

In general, it may be said that the price of a given commodity is influenced materially by the amount of that commodity available for market. Although other factors admittedly play an important part in the determination of the price of apples, nevertheless, production is conceded to be usually the most influential. For example, the sharp slump in apple prices during the fall of 1926 was not an unexpected accompaniment of the bumper crop of that year, the

[9]See also discussion on page 26.

largest of record since commercial production has been reported separately from total production. These low prices reduced the purchasing power of apples, causing much depression among orchardists, especially where apple-growing is relied upon as the only or principal source of income.

Since 1910 the United States Department of Agriculture has reported the price received for apples by the producer at the farm. Due to the wide variability in the prices reported to the Department, these farm prices are more or less unstable, and in this treatise are considered only as a general index of the changes in the level of apple prices. To quote Chas. F. Sarle, Agricultural Statistician for Farm Prices of the United States Bureau of Agricultural Economics.[10]

> Farm price data for apples should be used with caution. The dispersion in apple prices is wider than for most other farm products. While our farm price sample is sufficiently large to render the average reasonably stable with such farm products as wheat, corn, hogs, eggs, etc. it would be physically impossible to obtain enough reports on apple prices to make them comparable with wheat prices for example. To illustrate, the farm price sample for our major farm products in surplus states seldom has a coefficient of variability exceeding 10 percent, while for apples it is usually 30 percent or more. While 40 or 50 reports will render the average reasonably stable when the coefficient of variability is 5 percent it would require 1600 reports to give the same stability with apple prices. They do, however, tend to reflect the general trend of prices over a period of several months. The change from month to month may be due fully as much to changes within the sample (fluctuations of sampling) as to actual changes in the price of apples.

Despite the inaccuracies which may exist in the monthly average farm price, evidently the annual price is considered by the Department of Agriculture as a dependable index of changes in the price level. It is believed, furthermore, that the December 1 farm price is a more reliable index than the weighted average annual price, which is calculated from the prices reported as of the 15th of each month throughout the apple season by the regular crop reporters, many of whom are not commercial apple producers or shippers. The December 1 price represents a much larger sample than any of the mid-monthly prices. It is secured through a special inquiry by the Department, covers a larger number of reports, and comes nearer to indicating the level at which a large volume of apples is changing hands in commercial transactions. It is taken near the height of the commercial movement, after the harvest has been completed, when numerous sales are being consummated, and

[10]Letter Jan. 27, 1927.

many earlier transactions have become a matter of record. The price on December 1 is, for the purpose of this study, a sufficiently accurate measure of the value of apples in a given year.

This annual price has been correlated with total apple production for the period 1910 to 1925 and with commercial production for the period 1916 to 1925 in an effort to determine what relationship exists between price and production, and whether price is related more closely to total production or to commercial production.

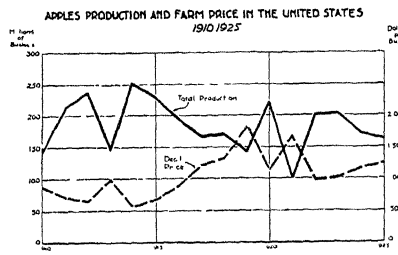

Fig. 17.—A large crop usually means low prices; a small crop high prices

There appears to be a much more significant relationship between farm price and total crop than between farm price and commercial crop.[11] The relationship between price and total crop is clearly shown in Figure 17.

For every change of one unit in total apple production during the period 1910 to 1925 there tended to be an accompanying change of .64 unit in price;[12] more specifically, a change of 10,000,000 bushels in the annual total apple crop of the United States tended to be accompanied by a change of $0.064 in the farm price per bushel—the larger the crop the smaller the price and vice versa.

It must be recognized that the period of time in both these series is too short to be really conclusive or to serve as a dependable basis for forecasting the movements of price in the future. The series cover only 16 years in the one case and 10 in the other. Comparable farm price data were not available prior to 1910, and the commercial production was not reported separately until 1916. Nevertheless, the data are sufficiently conclusive to demonstrate that the demand for apples is strikingly inelastic and that production is highly influential in determining price.

Although production of any farm crop influences price materially, price is also instrumental in influencing production. Any change that price may cause in production depends to a large extent upon the time required to produce that particular commodity and upon the ease with which producers may alter their production programs. Thus, a year of low potato prices is usually reflected in

[11]Calculation of the Pearsonian coefficient of correlation shows a coefficient of —.77 between farm price and total production, whereas the coefficient is only —.48 between farm price and commercial production.

[12]Calculation of the slope of the line of regression of the paired variables, farm price and total production, resulted in the following equation: y=—.64x.

reduced potato acreage the following year. Potatoes are an annual crop. High prices for poultry products are followed promptly by increased production. The poultry business is one in which the turnover is quick and the required capital small, and is capable of rapid expansion or contraction to conform with changing price levels. Apple production, on the other hand, is slow to respond to price changes. Orchards cannot be brought into production in a season, nor abandoned or replaced with other crops temporarily when prices are unsatisfactory.

The size of the commercial crop in any year is affected to some extent by price, however. If prices are so low that it does not pay the orchardist to market any of his crop, or at the most only the better grades, it is plain that the commercial crop will be lowered to just that extent. During seasons of high production and low prices a larger percentage of the total crop is allowed to go to waste on the farms where grown,[13] and it is not uncommon for large quantities of apples to remain unharvested because the producer is unable to secure enough margin to justify incurring the additional expenses incident to harvesting, grading, packing, transportation, storage, and selling. On the other hand low production and high prices tend to bring onto the market larger quantities of apples, mostly of the lower grades, that would not pay marketing costs at lower prices.

Price, of course, has little, if any, influence on the current total apple crop, though prospective prices may serve to encourage or to discourage thinning, spraying, and other orchard practices during the growing season. Any effect apple prices may have on total production is slow in operating. An extended period of low prices always discourages plantings and this may reach the point where current plantings are insufficient to maintain the present orchards. This eventually lowers per capita production, which in turn tends to bring higher prices. Recovery in prices stimulates greater plantings and ultimately production rises and the cycle starts over again. To quote Warren and Pearsons:[14]

> There is a tendency for apple prices to be high for about a generation. Planting then tends to be too great. When the trees that are planted in that period come into bearing there is a tendency for low prices and under-planting for about a generation. Planting is usually done because apples have been profitable. The acreage that should be planted is not dependent upon past prices but is dependent upon the demand of a generation hence.

The recent period of low apple prices has diminished plantings and should eventually bring on an era of improved prices.

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[13]See also page 13.
[14]"The Agricultural Situation", p. 202.

Annual variations in the total apple crop of the United States are in no sense attributable to price changes. These fluctuations depend primarily upon temperature and rainfall and upon the tendency for the trees to bear heavily in alternate years. With few exceptions the crops in the even years since 1900 have been much larger than in the odd years.

THE INFLUENCE OF FOODS SUBSTITUTED FOR APPLES

The substitution of other foods, notably citrus and other southern fruits and vegetables, has been an influential factor in keeping apple prices depressed during recent years. Widespread publicity given to the value of fruits and vegetables in the diet has added to the competition facing the apple. The production of oranges increased five-fold in the first quarter of the present century, and during the same period grapefruit advanced from a position of almost no commercial importance to approximately 9,000,000 boxes a year. Imports of bananas have increased, the output of canned foods and the production of prunes, raisins, and other dried fruits have expanded to much greater proportions. The commercial production of truck crops is no longer confined to the areas immediately adjacent to the markets; our cities are supplied with these commodities almost continuously throughout the year from districts favorably located with respect to growing conditions. The development of transportation and storage facilities during the past two decades has done much to change the competitive conditions which the apple grower must face.

TABLE 8, PART 1.—Production of Various Crops Competing With Apples in the United States 1889—1925

(In thousands—i. e., 000 omitted)

Year	Bananas* (imports)	Raisins†	Head lettuce‡	Oranges	Grapefruit
	Bunches	*Tons*	*Crates*§	*Boxes*	*Boxes*
1889	.....	.....	....	4,392	10
1899	.....	47	.....	6,167	31
1909	36,974	70	.....	22,530	1,189
1919	36,993	182	8,116	23,390	5,795
1920	39,320	177	12,106	30,422	5,439
1921	43,366	145	11,056	21,351	6,396
1922	45,094	237	10,829	31,331	7,674
1923	43,959	290	11,673	36,167	8,473
1924	47,384	170	12,161	29,273	8,842
1925	55,483	180	16,171	29,346	6,224

*Quantity imported not stated prior to 1908.
†Not reported separately prior to 1899.
‡Quantity not stated prior to 1917.
§Crates containing 2 dozen heads in 1919 and 1920; 3 dozen in 1921 and 1922; and 4 dozen in 1923, 1924, and 1925.

TABLE 8, PART 2.—Per Capita Production

Year	Bananas*	Raisins	Head lettuce	Oranges†	Grapefruit‡	Apples
	Lb.	*Lb.*	*Heads*	*No.*	*No.*	*Bu.*
1889	.....	.....	.....	12	Less than 1	2.3
1899	.....	1.2	.....	14	Less than 1	2.3
1909	20	1.5	.....	44	Less than 1	1.6
1919	17	3.5	1.9	40	4	1.4
1920	18	3.3	2.7	51	3	2.1
1921	20	2.7	3.7	35	4	.9
1922	20	4.3	3.6	51	5	1.9
1923	20	5.2	5.1	58	5	1.8
1924	21	3.0	5.2	46	5	1.5
1925	25	3.2	6.8	46	3	1.4

*Assuming an average of 50 pounds net per bunch.
†Assuming an average of 176 oranges per box.
‡Assuming an average of 64 grapefruits per box.

The average carlot unloads of eight leading fruits and vegetables from 1924 to 1926 in four important Ohio cities are shown in Figure 18. Of these eight commodities, oranges, grapefruit, and grapes doubtless offered the most competition to apples. Their season overlapped to a large degree that of apples. Cantaloupes and peaches, on the contrary, although unloads were heavy, arrived on the markets in the summer and overlapped the apple season only slightly. Apple unloads in the four cities during the last three years led all of the fruits, and were exceeded only by potatoes. Oranges, however, perhaps the greatest single rival of apples, were not far behind. Oranges and grapefruit together reached a total of 4,653 cars, or 22 percent more than the unloads of apples.

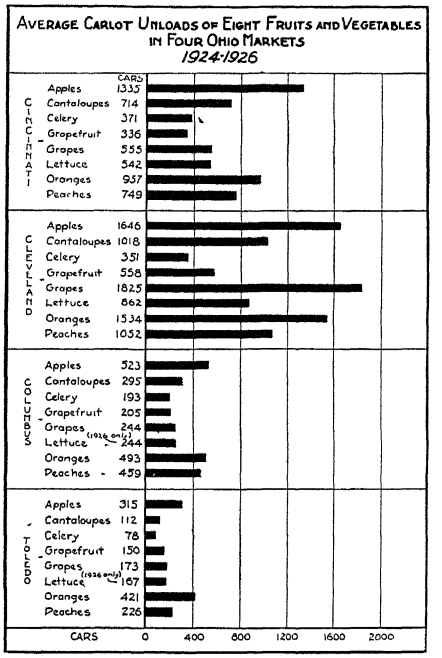

Fig. 18.—Carlot unloads of apples rank high in spite of large supplies received in these markets over the highways. Most of these rail shipments originated outside the State

PURCHASING POWER OF APPLES

Price levels in recent years have kept the apple grower at a disadvantage much of the time. If the average of the five-year period 1910 to 1914 be considered as normal, during which the price paid to the

grower for apples would purchase a specified normal quantity of non-agricultural commodities, and this normal relationship between the prices of apples and the prices of non-agricultural commodities be represented by 100, we find that in eleven years of the twelve since the expiration of this so-called normal period the purchasing power of apples has been below 100. The one exception was 1921 when it reached 105, or a bushel of apples in that year would buy 5 percent more than during the normal period.

The lowest point was reached in 1916 and 1917 when the purchasing power of apples declined to 68 and 69. The average for the twelve years 1915 to 1926, inclusive, was only 85. Even in 1919 and 1920, when apple prices were at the highest points attained in many years, their purchasing power remained below normal, due to the fact that prices of many other commodities had increased more than apple prices. Plainly the apple industry, generally speaking, has been struggling through a period of adversity.

In 1913, 1915, 1916, 1917, and 1918 the purchasing power of apples, considering the country as a whole, was lower than that of any of the main groups of agricultural commodities, including grain, meat animals, all fruits and vegetables taken collectively, dairy and poultry products, and cotton and cottonseed. In 1921 the puchasing power of apples temporarily became higher than any of these because of an extraordinarily light crop and high prices during a period of rapid decline of most commodities. The pronounced depression came in the apple industry a little earlier than in other types of farming, and although the decline was severe, yet the purchasing power of apples did not fall as low as that of grain, livestock, and cotton did a little later. The fluctuations in all lines of agriculture have been violent, but apples have not suffered as extreme changes as grain, livestock, or cotton. These three lines have been above normal oftener than apples, however, since 1910. Dairy and poultry products have not moved through such an extreme range as apples, and although they have been below normal constantly since 1914, yet they have been in more or less favorable position since 1921 In general, few lines of agriculture have suffered more than apples from the recent depression.

Some encouragement may be derived from the very fact that the purchasing power of apples has been low for such an extended period. The low value has tended to discourage the planting of trees, and per capita production in the United States has declined. Inasmuch as lowered production means higher prices, it is likely that the apple grower in the future will receive relatively better prices than in recent years.

The estimated annual gross income from farm sales of Ohio apples[15] since 1919 indicates that the purchasing power of that part of the crop that was sold, expressed in terms of non-agricultural commodities, was above average in 1920-21, 1922-23, 1923-24, and 1926-27, and below average in 1919-20, 1921-22, 1924-25, and 1925-26; average being the mean of the eight years from July 1, 1919 to June 30, 1927. Income from sales of certain other Ohio fruits—peaches, pears, and grapes—followed much the same course until 1926-27, when their purchasing power remained below average.

TABLE 9.—Relative Purchasing Power of Estimated Gross Income From the Sale of Ohio Farm Products 1919-20 to 1926-27

In terms of non-agricultural commodities
(Base—average 1919-20 to 1926-27=100)

Year	Meat animals	Grains	Dairy products	Poultry products	Vegetables	Apples	Other fruits	Tobacco	Wool
1919—20	147	186	125	106	94	61	79	171	137
1920—21	83	81	81	76	91	125	140	116	96
1921—22	88	63	90	94	76	74	76	71	53
1922—23	95	72	104	92	101	102	132	86	92
1923—24	85	90	110	92	113	136	94	79	108
1924—25	97	97	94	115	105	86	78	95	106
1925—26	96	94	97	119	111	90	95	91	104
1926—27	106	107	99	115	111	120	90	68	98

The orchardist commonly remarks that when apples are high he has few or none to sell, and that when he has a good crop the price is low. He is more interested in a high return for his total crop than in a high price per bushel. The grower whose trees failed to produce a crop can gain little satisfaction from the knowledge that apple prices are high.

It is true that the actual value of the Ohio apple crop in any year depends not only upon the price per bushel but also upon the volume of commercial apples, or the number of bushels available for sale, in that year. Yet total production figures, since they include much waste and unsalable fruit, are unsuitable as a measure of the amount of apples available for sale. It is unfortunate that commercial production was not estimated prior to 1916.

The cash value of the Ohio commercial apple crop each year from 1916 to 1926 may be measured, of course, and this may be compared with the total for the United States. The exchange value or purchasing power of the crop is of greater significance than the

[15]Estimated by V. R Wertz.

cash value because of the changes from year to year in the purchasing power of the dollar. The exchange value may be expressed in terms of non-agricultural commodities, but the incompleteness of data prevents its being compared with the pre-war years 1910 to 1914, the so-called normal period.

The purchasing power of the commercial apple crop in Ohio and in the country as a whole from 1916 to 1926 is presented in Figure 19. It will be noted that the purchasing power of the Ohio apple crop has fluctuated less widely than the commercial production. The two tend to parallel each other—that is, the purchasing power usually rose when the commercial crop was large and declined when it was small, in spite of the fact that apple prices at the farm generally bore an inverse relationship to production. Thus the gross income from the Ohio apple crop had a larger purchasing power in years of large crops and low prices than in years of small crops and high prices. Evidently the number of bushels sold exerted more influence than the price in determining gross income. Of course, gross income was not always proportionate to profits.

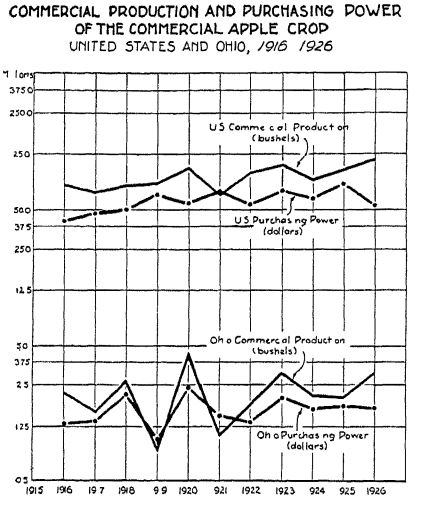

Fig. 19.—Purchasing power does not fluctuate so widely as the commercial crop, yet the purchasing power of the Ohio crop parallels the commercial production in the State very closely

THE SEASONAL MOVEMENT OF APPLE PRICES

Apple prices at a stated time usually are not the same in different markets, due to location, variations in supply, fluctuations in local demand, unequal transportation costs, and the like, yet all markets tend to keep in line within certain limits.

Prices of apples in New York City in the main reflect the general jobbing price level in other markets as well. The amount of trading in this one city is so great (including much open bidding on the public fruit and produce auctions) that minor factors that might have a noticeable effect on other markets tend to be offset or obscured. Purely local factors do play some part in determining

the New York price level, of course, but their effect tends to be minimized in the long run. Thus the New York price at any given time is in a general way a fair indication of the apple market. It reflects the operation of the forces of supply and demand in the United States as a whole, and may be taken as a fairly reliable index of the price movements in other markets as well as in that city. Quotations of apple prices in New York are more nearly continuous and cover a longer period of time than in other markets where large quantities of Ohio apples are sold. These considerations have resulted in the choice of New York prices as the basis of this study. They are given in Table 32.

Average prices of apples in New York show considerable fluctuation. The marketing period during which quotations are available extends from September through the following May, and during the earlier months of the season there usually appears to be some uncertainty about the course prices will take. Wide changes in price are most noticeable in the fall months. As the supply becomes more definitely known the trend of prices becomes more certain, and from October through January, when most of the crop is marketed, the price usually continues in some established direction with only minor fluctuations. Then toward the close of the season as the market demand becomes less dependable and competing commodities begin to exert a greater influence on the market, apple prices again develop uncertainty. The average seasonal price of barreled apples in New York since 1900 (exclusive of the abnormal years 1917-1920) shows a continuous upward movement from September to April, with a decided drop at the close of the season in May.

In contrast to the frequent extreme changes in the New York jobbing price it will be noticed that the farm price is much more regular. Sharp variations in farm price are rare. Values established in the fall are usually maintained without great change throughout the season.

Current receipts of apples in any market have much to do with the price prevailing there, aside entirely from the influence of the general apple supply known to exist in the country, though not immediately available in that market. If receipts become too heavy the balance between local demand and supply is upset, the market becomes sluggish, and prices decline. A "buyer's market" develops. Low prices discourage shipment,[16] cars are routed elsewhere or

[16]Provided, of course, the supply in the country as a whole is not much in excess of general requirements In that event shippers have little choice Prices are low everywhere, so shipments continue to come into all markets beyond local needs.

shipments are withheld, and as soon as the surplus is absorbed prices recover. If receipts become insufficient to meet adequately the local demand the situation develops into a "seller's market." Demand becomes keen, prices advance, and additional shipments are attracted. Under normal conditions these forces tend to keep the market on a fairly even keel.

The only official measure of market receipts is the monthly report of carlot unloads compiled by the United States Bureau of Agricultural Economics. This includes only receipts by rail or boat,[17] but in New York City this is not far from the total. Monthly carlot unloads of apples in New York City since 1918 are compiled in Table 37. See also Figure 20. It will be noted that as the season progresses prices usually rise and receipts fall off. The heaviest receipts are in October and thereafter decline more or less steadily throughout the season. The average price, on the other hand, is lowest in September and rises month by month during the season, though this is traceable not only to diminishing receipts but also to increasing storage charges, brisker demand in the colder months, and often to better quality of the supplies on the market after early varieties are exhausted.

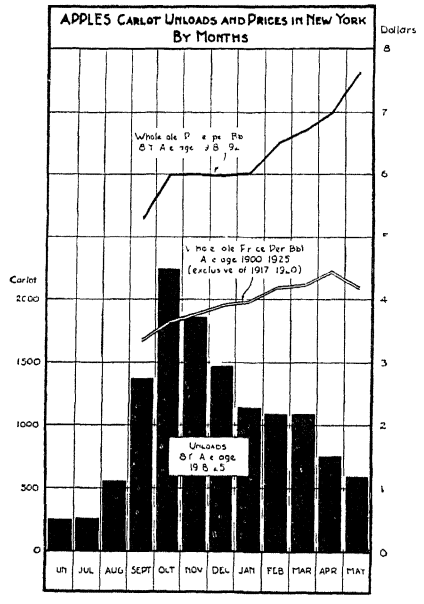

Fig. 20.—As the season progresses prices usually rise and receipts fall off

Prices in any given year may not follow the course indicated by the average seasonal price. Prices do not always rise from fall to spring. During six of the ten seasons 1916-17 to 1925-26 the price per barrel at New York in April was substantially higher than in the preceding October, but in the remaining four years the April price either was lower than the October price or stood at practically the same level. These declines did not come always in years of high production. In 1921-22 the price declined following the shortest

[17]Converted into carlot equivalents.

crop in years. In 1922 and 1923 the apple crops were about the same size and larger than usual, yet the New York price rose materially from October, 1922 to April, 1923 and declined in the months following October, 1923, recovering in April, 1924 to about the same level it occupied in the previous October. Manifestly the size of the apple crop is not the only factor which determines the level of prices and their trend through the season.

FARM PRICES OF APPLES IN OHIO

Since 1910 the December 1 farm price for apples in Ohio has been rather consistently higher than the price received by producers in neighboring states or in the United States as a whole.

Evidently the Ohio apple grower possesses certain marketing advantages not found in some other sections. The explanation for this is doubtless to be found in the fact that Ohio has become largely an industrial state with a large percentage of non-agricultural population. These people are consumers, not producers, of apples. The per capita wealth in this state is high; the number of automobiles per capita is large; Ohio's highways are good. These factors unite to make a good nearby market for Ohio apples, and make it possible for many growers in this state to sell all or part of their crop each year at the orchard direct to consumers for prices in excess of those received by carlot shippers.

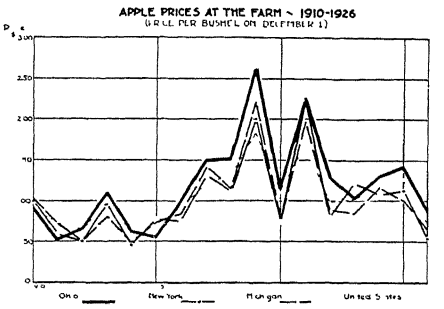

Fig. 21.—The Ohio apple grower usually has an advantage in price over producers in neighboring states or in the United States as a whole

In general, apple growers in Ohio have not suffered so acutely during the recent deflation period as the growers in certain other sections where the surplus had to be moved many miles by rail. There are, of course, many individual exceptions, particularly in southeastern Ohio where most of the carlot shipments originate and where the consuming population is relatively sparse.

Since most Ohio-grown apples are marketed at the orchard and in nearby towns and cities, and doubtless will continue to be sold thus in the future, it would seem very desirable for the Ohio apple producer to study closely the requirements and demands of his local

market outlets, in order that he may so adjust his production activities as to conform with these needs. He ought to know what varieties are preferred by the consumers or dealers to whom he sells. What grades and sizes of apples do they want? How may his fruit be packed to make the strongest appeal to his customers? How much can be sold to local dealers? How much direct to consumers at the orchard or at roadside stands? How much and what sort of competition does he face, and how may he improve the quality and attractiveness of his fruit so as to best meet this competition?

With the expected decline in production in general farm orchards in Ohio, the commercial crop will face less competition from these sources, and with the improved quality that accompanies careful culture and handling, the Ohio apple should be able to hold its local markets with increasing advantage against competition from more distant sections. Of course, so long as Ohio does not grow enough apples to supply her consumers we may expect to continue to see attractively-colored, well-graded and well-packed fruit from other states, particularly the Northwest, in our fruit stands and retail stores. Nevertheless commercial fruit growers in this state have discovered that well-grown Ohio apples, if uniformly graded and carefully and attractively packed, can compete successfully with boxed apples from the Pacific Coast.

SUMMARY

Total apple production in the United States declined during the first quarter of the present century, and is only slightly larger now than in 1889. Production in Ohio is smaller than in 1889. Large increases have taken place in the Western states.

The apple industry has been undergoing a shift from farm orchards to commercial orchards, and the number of trees has declined while strictly commercial production has increased.

Commercial production in Ohio averages about 2,250,000 bushels annually, or 2.3 percent of the commercial crop of the United States.

Ohio ranks seventh among the states in total apple production, thirteenth in commercial production, seventh in number of bearing trees, fifth in number of non-bearing trees, and fifteenth in number of carlot shipments.

About 30 percent of the apple crop in Ohio is commercial. In neighboring states 50 percent is commercial, in the Western states

75 percent, and in the United States as a whole 50 percent. Twenty-eight states have percentages higher than Ohio.

Per capita production from 1917 to 1926 in the United States was 1.6 bushels and per capita commercial production .82 bushel per annum. In terms of total crop Ohio produced enough apples to supply 73 percent of her population, and in terms of commercial crop 42 percent of her population.

In 1919 Ohio apples were valued at $6,845,811, or 1.1 percent of the total value of agricultural crops in the state. Apples made up 45.1 percent of the value of all the fruits grown in Ohio in that year.

In years of light production the percentage of commercial fruit usually is greater, and in years of heavy production smaller than average.

One-fifth of the apple trees in Ohio are in commercial and four-fifths in farm orchards

Commercial apple orcharding in Ohio is mainly in the southeastern part of the state along the Ohio River and in a few counties bordering Lake Erie and in the eastern part of the state.

About 10 percent of the apple trees in Ohio commercial orchards are of summer varieties, the remaining 90 percent being fall and winter varieties. Rome Beauty constitutes almost 30 percent of the apple trees in commercial orchards, and is grown mainly in the southeastern part of the state.

Maintenance of Ohio apple orchards requires that around 28 percent of the trees be non-bearing. Approximately that proportion existed in 1925 in the state as a whole, but in 13 important apple-growing counties more than 28 percent were non-bearing. In three of these counties more than 40 percent of the trees were non-bearing. The recent decline in number of trees seems to be about arrested and some increase in certain localities may be expected.

Exports of apples from the United States have increased substantially in recent years, but Ohio takes little part in this international trade.

In Ohio there is more than 19,000,000 cubic feet of cold storage space held at 30 to 44 degrees Fahrenheit. No figures are available showing storage facilities for apples on Ohio farms. Much fruit is stored in Ohio each year, partly because of the advantageous location of certain Ohio cities with respect to consuming population and transportation facilities.

Most Ohio apples are marketed within the state and in nearby cities. More than three-fourths of the carlot shipments from Ohio points are unloaded in Ohio markets.

Ohio, being in a deficit area, uses apples from many other states, principally New York and Washington.

Three-fourths of Ohio's annual carlot shipments of apples are made in September, October, and November; one-half in October.

Carlot shipments constitute only about 17 percent of Ohio's commercial crop.

Production influences apple prices very materially; prices usually are lower in years of large crops and higher in years of small crops.

Substitution of other foods, notably citrus and other southern fruits and vegetables, has helped to keep apple prices low in recent years.

The purchasing power of apples, along with other agricultural commodities, has been low since before the World War, except in 1921.

The gross income from the Ohio apple crop had a larger purchasing power in years of large crops and low prices than in years of small crops and high prices.

It is likely that declining per-capita production will place apple growers in better position in the future.

The average seasonal price of barreled apples in New York since 1910 has moved upward continuously from September to April with a decided drop at the close of the season in May. The price at the farm was much more regular than the city jobbing price.

Farm prices in Ohio since 1910 were rather consistently higher than the prices received by producers in neighboring states or in the United States as a whole.

TABLE 10.—Apples: Estimated Total Production by States, 1889-1926*

(Thousands of bushels, i. e., 000 omitted)

State	1889 (Census)	1890	1891	1892	1893	1894	1895	1896
Maine	3,071	2,025	3,690	3,735	1,575	4,455	1,440	5,490
New Hampshire	2,283	1,520	3,560	3,694	1,505	4,230	1,302	5,712
Vermont	1,213	1,224	2,380	2,175	1,782	2,623	1,596	3,008
Massachusetts	1,690	1,026	3,570	3,450	2,040	5,500	2,537	7,623
Rhode Island	239	70	355	247	184	279	241	440
Connecticut	1,994	666	3,627	2,255	2,175	3,266	3,936	4,500
New York	8,494	8,060	29,410	24,448	17,138	24,516	25,480	54,178
New Jersey	604	510	2,870	1,844	2,240	2,394	3,965	2,376
Pennsylvania	7,553	3,052	20,790	13,475	14,190	14,144	15,675	26,522
Delaware	110	74	460	102	336	90	618	126
Maryland	1,412	736	2,950	918	2,449	594	2,770	673
Virginia	8,391	4,256	12,638	5,436	12,640	2,550	14,980	4,180
West Virginia	4,440	1,122	7,245	3,080	3,780	1,212	9,038	5,130
North Carolina	7,592	3,840	7,200	5,670	7,370	1,596	10,591	4,059
South Carolina	435	279	449	442	456	102	476	258
Georgia	2,113	910	1,518	1,590	1,148	414	1,634	764
Florida	3	.....	.....	.....	.....	.....	.....	.....
Ohio	13,789	3,900	15,657	785	2,889	10,791	24,716	19,778
Indiana	8,784	3,332	9,594	2,667	1,179	4,050	12,788	7,810
Illinois	9,601	4,158	8,645	2,641	1,450	6,384	11,692	11,152
Michigan	13,155	7,917	8,364	8,200	7,210	13,041	5,408	22,990
Wisconsin	1,592	1,062	1,209	1,068	821	1,125	437	1,524
Minnesota	80	98	105	119	118	122	101	221
Iowa	5,040	3,795	5,568	3,050	1,920	4,355	3,850	6,716
Missouri	8,693	7,260	9,660	4,144	2,808	7,708	14,448	11,340
North Dakota	.....	.....	.....	.....	.....	.....	.....	.....
South Dakota	2	.....	.....	.....	.....	.....	.....	.....
Nebraska	1,173	850	1,700	582	763	1,065	1,729	2,059
Kansas	3,713	3,600	6,240	1,750	1,425	5,280	5,270	4,590
Kentucky	10,679	3,375	10,902	7,050	4,320	1,764	16,200	6,273
Tennessee	7,284	4,818	8,228	6,848	8,192	1,972	12,060	4,125
Alabama	1,239	636	1,060	1,386	940	542	1,504	476
Mississippi	605	150	456	483	386	287	596	454
Louisiana	118	.....	.....	.....	.....	.....	.....	.....
Texas	743	270	760	550	609	561	862	744
Oklahoma	.....	.....	.....	.....	.....	.....	.....	100
Arkansas	1,894	1,585	2,730	2,302	2,702	1,616	5,023	2,276
Montana	6	.....	.....	.....	20	50	40	55
Wyoming	.....	.....	.....	.....	.....	.....	.....	.....
Colorado	71	75	135	140	100	297	343	248
New Mexico	37	40	80	80	90	100	150	100
Arizona	2	.....	.....	.....	.....	.....	.....	.....
Utah	57	81	200	175	201	178	288	171
Nevada	30	30	30	20	10	20	20	20
Idaho	88	120	170	150	250	270	316	350
Washington	295	522	693	611	821	819	1,146	972
Oregon	1,038	1,344	1,619	1,104	1,632	1,580	1,706	713
California	1,655	1,754	2,390	2,070	2,909	2,706	3,034	2,304
United States	143,105	80,142	198,907	120,536	114,773	134,648	219,600	232,6.0

*From U. S. Department of Agriculture Yearbook.

TABLE 10.—Apples: Estimated Total Production by States, 1889-1926*—Continued

(Thousands of bushels, i. e., 000 omitted)

State	1897	1898	1899 (Census)	1900	1901	1902	1903	1904
Maine	675	2,205	1,422	5,000	2,550	3,780	4,170	5,600
New Hampshire	1,400	4,274	1,979	5,700	1,000	4,300	1,600	4,700
Vermont	1,452	1,968	1,177	3,800	1,700	3,000	1,550	3,900
Massachusetts	2,040	3,600	3,023	6,300	1,700	6,400	3,300	5,500
Rhode Island	115	188	339	400	100	500	200	300
Connecticut	2,258	3,190	3,709	3,800	1,100	4,700	2,000	2,900
New York	19,670	13,156	24,111	47,000	11,000	41,000	46,000	55,000
New Jersey	2,285	1,321	4,641	2,900	1,000	4,000	3,100	3,100
Pennsylvania	14,040	14,625	24,061	18,000	9,000	19,000	18,500	25,000
Delaware	300	120	703	600	100	600	300	500
Maryland	2,372	1,206	3,151	2,700	1,900	2,000	2,700	2,100
Virginia	14,000	5,670	9,836	8,500	9,500	6,700	13,100	6,000
West Virginia	6,655	2,159	7,496	4,200	6,100	4,300	3,800	6,500
North Carolina	7,552	8,184	4,663	7,400	6,500	6,600	6,200	6,600
South Carolina	428	401	252	380	360	430	440	490
Georgia	1,100	818	671	900	700	1,000	1,100	1,200
Florida			2					
Ohio	7,656	4,260	20,617	13,800	10,500	12,700	13,500	14,000
Indiana	5,840	1,500	8,620	4,500	6,500	6,300	5,800	5,900
Illinois	14,022	3,717	9,178	7,500	5,900	10,100	5,100	6,000
Michigan	3,780	11,816	8,932	11,800	5,200	18,000	15,400	18,700
Wisconsin	465	1,423	303	1,500	600	1,800	1,400	2,400
Minnesota	152	267	120	400	250	400	600	650
Iowa	5,548	2,765	3,130	5,300	2,900	6,700	4,800	7,000
Missouri	10,528	2,352	6,496	8,360	10,500	11,700	6,200	9,700
North Dakota			1					
South Dakota			17	40	50	60	100	140
Nebraska	2,512	1,284	1,343	1,800	1,700	3,100	1,400	2,800
Kansas	4,845	2,000	3,214	5,300	6,800	5,800	3,000	4,600
Kentucky	7,332	5,088	6,054	6,400	8,300	4,700	7,100	7,000
Tennessee	8,037	4,205	5,388	6,500	7,300	4,600	6,400	5,300
Alabama	1,166	1,158	719	1,200	1,100	1,100	1,400	1,500
Mississippi	398	360	249	500	400	410	500	430
Louisiana			69					
Texas	862	780	592	800	500	610	500	600
Oklahoma	250	160	334	470	440	650	580	550
Arkansas	4,522	2,911	2,811	2,900	3,300	4,000	2,400	4,000
Montana	60	80	44	100	80	180	220	260
Wyoming			1					
Colorado	423	340	258	600	730	1,200	1,000	2,000
New Mexico	250	175	142	260	220	350	200	310
Arizona			13	10	20	20	10	20
Utah	430	330	190	400	250	300	380	470
Nevada	20	20	11	20	30	40	60	60
Idaho	240	400	224	500	250	510	470	650
Washington	1,700	2,058	729	1,950	1,870	2,300	2,600	2,700
Oregon	2,240	2,227	874	2,300	1,500	2,200	2,400	2,600
California	4,110	3,300	3,488	3,200	4,000	4,200	4,100	3,900
United States	163,728	118,061	175,397	205,930	135,500	212,330	195,680	233,630

*From U. S. Department of Agriculture Yearbook.

TABLE 10.—Apples: Estimated Total Production by States, 1889-1926*—Continued

(Thousands of bushels, i. e., 000 omitted)

State	1905	1906	1907	1908	1909 (Census)	1910	1911	1912
Maine	2,800	3,800	4,950	1,800	3,636	3,550	6,800	5,400
New Hampshire	1,500	2,000	2,100	1,500	1,108	1,800	1,600	2,200
Vermont	1,700	2,200	2,100	2,200	1,460	2,700	2,250	2,600
Massachusetts	2,700	3,400	2,900	2,400	2,550	2,900	3,000	3,300
Rhode Island	300	300	200	200	213	300	400	300
Connecticut	2,400	2,500	2,200	1,000	1,541	1,800	2,400	1,700
New York	21,000	31,000	28,000	33,000	25,409	17,000	39,000	44,000
New Jersey	2,600	2,100	2,200	1,300	1,407	1,700	3,100	1,700
Pennsylvania	13,500	17,500	13,800	14,800	11,049	11,600	20,500	12,700
Delaware	500	400	200	300	183	350	300	420
Maryland	2,800	2,000	2,000	2,200	1,823	2,700	2,600	2,650
Virginia	10,100	5,500	5,200	8,900	6,107	12,100	7,200	15,000
West Virginia	4,800	5,900	2,700	5,300	4,225	7,100	7,800	10,300
North Carolina	5,000	4,700	2,600	7,100	4,776	7,200	3,600	7,600
South Carolina	360	480	160	760	363	740	470	600
Georgia	700	1,300	500	1,500	896	1,400	800	1,400
Florida					3			
Ohio	4,800	16,000	4,000	6,000	4,664	5,900	18,700	10,600
Indiana	4,100	9,000	2,000	2,200	2,759	4,900	8,900	4,200
Illinois	4,500	12,100	1,600	2,600	3,093	800	10,600	5,800
Michigan	6,300	13,700	9,500	7,000	12,333	4,200	12,300	17,200
Wisconsin	1,300	2,200	1,700	1,600	2,232	400	3,000	2,000
Minnesota	700	600	900	500	1,044	150	1,300	700
Iowa	3,800	7,900	3,600	3,000	6,747	200	9,500	1,500
Missouri	6,300	20,000	1,300	6,100	9,969	7,600	11,600	19,200
North Dakota					4			
South Dakota	120	170	150	90	192	30	240	200
Nebraska	1,600	3,900	900	1,800	3,321	1,400	3,600	2,800
Kansas	3,600	7,700	180	5,700	1,356	6,600	2,400	6,700
Kentucky	5,700	9,100	3,000	4,000	7,369	5,300	6,100	9,600
Tennessee	3,400	7,100	1,600	5,400	4,640	5,200	2,900	8,900
Alabama	800	1,400	400	1,300	888	1,000	700	1,200
Mississippi	320	380	140	450	266	330	240	450
Louisiana					34			
Texas	700	500	300	400	168	400	200	500
Oklahoma	750	1,100	950	700	742	1,200	1,050	1,700
Arkansas	3,200	4,300	3,600	1,600	2,296	2,700	3,000	5,100
Montana	310	360	440	510	567	420	900	900
Wyoming				10	18	10	20	30
Colorado	1,600	2,200	400	1,400	5,559	1,500	2,700	3,100
New Mexico	420	470	120	480	417	340	680	750
Arizona	50	40	40	70	73	100	110	130
Utah	420	430	220	380	350	410	460	680
Nevada	70	80	119	30	74	160	100	260
Idaho	500	610	700	760	660	1,250	1,200	1,650
Washington	2,500	3,000	3,000	3,200	2,672	5,800	3,500	7,700
Oregon	1,800	2,700	2,100	2,600	1,931	3,800	1,500	4,100
California	3,800	4,600	4,000	4,800	4,935	4,600	4,700	5,700
United States	136,220	216,720	119,560	148,940	146,122	141,640	214,020	235,220

*From U. S. Department of Agriculture Yearbook.

TABLE 10.—Apples: Estimated Total Production by States, 1889-1926*—Continued

(Thousands of bushels, i. e., 000 omitted)

State	1913	1914	1915	1916	1917	1918	1919 (Census)
Maine	3,000	7,400	2,160	5,040	4,275	2,010	4,829
New Hampshire	800	2,000	1,060	1,596	1,035	1,155	1,364
Vermont	700	3,200	975	3,312	1,248	990	960
Massachusetts	2,300	4,400	2,655	3,450	2,163	2,430	3,187
Rhode Island	300	400	177	261	195	189	334
Connecticut	2,100	2,500	1,533	1,830	1,251	999	1,395
New York	19,500	49,600	25,584	37,800	16,266	40,878	14,350
New Jersey	2,100	3,400	2,331	2,250	2,058	2,463	1,666
Pennsylvania	10,200	23,100	15,255	18,621	11,646	16,080	5,513
Delaware	180	500	366	250	798	714	606
Maryland	1,300	3,500	2,400	2,544	2,559	2,034	1,519
Virginia	5,200	15,300	13,176	13,300	11,778	10,068	8,943
West Virginia	1,000	12,400	7,540	10,032	4,320	5,856	4,189
North Carolina	3,000	9,000	5,916	7,074	4,500	3,588	2,000
South Carolina	260	800	663	588	1,635	1,407	216
Georgia	900	2,000	1,875	1,623	1,713	1,713	417
Florida	.....	.....	.....	.....	.....	.....	.....
Ohio	4,800	13,300	17,952	8,600	5,760	7,005	2,976
Indiana	6,600	4,300	11,650	3,921	4,836	1,794	1,190
Illinois	8,200	3,700	14,148	4,848	7,518	3,459	4,673
Michigan	8,900	17,200	9,450	12,480	4,146	9,792	5,844
Wisconsin	4,000	2,200	4,419	2,634	3,090	2,811	1,545
Minnesota	1,800	700	1,236	1,266	1,446	996	1,336
Iowa	7,100	1,600	9,660	4,725	3,795	1,584	1,810
Missouri	7,900	12,500	18,861	8,100	8,070	4,245	5,132
North Dakota	.....	.....	.....	.....	.....	.....	.....
South Dakota	320	200	300	348	336	273	168
Nebraska	2,300	1,200	3,800	1,700	1,854	525	907
Kansas	2,700	3,100	6,375	3,120	2,853	1,503	1,835
Kentucky	6,900	9,000	12,510	6,441	5,802	2,799	1,281
Tennessee	3,900	8,600	6,075	5,316	4,170	4,050	1,259
Alabama	900	1,600	1,596	1,140	1,449	1,662	577
Mississippi	370	500	423	348	.....	.....	218
Louisiana	.....	.....	.....	.....	.....	.....	44
Texas	300	500	560	468	357	273	487
Oklahoma	1,100	1,500	2,340	825	1,293	660	1,600
Arkansas	4,000	5,000	3,550	3,054	2,574	1,290	7,164
Montana	840	900	1,040	768	1,044	792	850
Wyoming	30	.....	.....	.....	.....	.....	30
Colorado	3,300	4,500	2,080	2,205	2,190	2,067	3,418
New Mexico	650	900	820	357	879	912	1,100
Arizona	90	96	120	138	129	138	125
Utah	610	800	426	100	906	786	760
Nevada	160	200	120	48	.....	.....	53
Idaho	1,400	1,700	1,720	440	3,843	1,200	3,800
Washington	6,900	8,300	7,300	9,675	19,830	16,491	25,295
Oregon	3,500	3,600	3,130	3,855	4,335	3,384	6,921
California	3,000	6,000	4,690	5,755	6,804	6,560	8,200
United States	145,410	253,196	230,017	202,246	166,749	169,625	142,086

*From U. S. Department of Agriculture Yearbook.

TABLE 10.—Apples: Estimated Total Production by States, 1889-1926*—Concluded

(Thousands of bushels, i. e., 000 omitted)

State	1920	1921	1922	1923	1924	1925	1926
Maine	1,680	4,060	1,250	2,500	3,241	3,305	2,260
New Hampshire	1,200	700	775	935	1,462	1,230	1,240
Vermont	993	600	960	521	895	935	800
Massachusetts	3,575	1,125	3,010	3,300	3,360	3,160	4,100
Rhode Island	390	63	200	450	324	299	391
Connecticut	2,375	758	1,300	1,600	1,480	1,375	1,900
New York	47,087	13,500	36,000	25,000	22,000	32,500	40,375
New Jersey	2,942	667	2,610	2,203	3,000	2,660	4,310
Pennsylvania	18,584	2,208	11,400	10,855	7,400	7,300	17,000
Delaware	822	68	1,414	1,200	1,250	1,340	2,376
Maryland	2,600	225	1,500	2,300	1,810	1,900	3,500
Virginia	13,744	570	8,960	10,000	14,500	7,844	19,902
West Virginia	8 040	420	5,625	8,320	7,000	4,185	10,875
North Carolina	6,320	593	6,000	2,700	6,350	3,192	5,986
South Carolina	440	293	383	274	600	386	647
Georgia	1,270	698	1,135	864	1,500	741	1,827
Florida							
Ohio	13,960	3,390	7,298	12,395	6,350	6,300	11,900
Indiana	4,596	1,029	4,148	5,035	1,900	2,430	4,100
Illinois	5,866	2,381	9,720	7,500	6,400	7,300	8,875
Michigan	16,500	6,317	11,850	13,159	6,000	9,000	9,045
Wisconsin	2,250	1,050	2,024	2,340	1,378	2,106	2,158
Minnesota	1,350	900	1,020	1,520	979	820	1,263
Iowa	4,410	630	4,410	4,350	2,800	2,400	3,642
Missouri	4,724	480	9,400	7,072	4,300	4,100	5,015
North Dakota							
South Dakota	180	126	263	212	150	62	169
Nebraska	797	125	1,620	880	1,000	450	761
Kansas	1,144	172	3,280	2,166	2,200	1,600	1,428
Kentucky	5,022	636	5,070	2,625	5,700	2,625	6,408
Tennessee	4,280	754	4,250	1,311	4,550	1,984	5,360
Alabama	1,186	890	1,098	731	1,190	595	1,328
Mississippi	190	145	216	120	270	221	324
Louisiana	34	35	37	31	30	28	35
Texas	274	274	264	270	330	264	380
Oklahoma	585	486	1,140	1,240	1,170	644	770
Arkansas	3,900	120	2,400	3,025	3,880	4,315	3,450
Montana	825	975	610	990	290	80	325
Wyoming	18	19	40	35	50	25	47
Colorado	2,830	3,200	4,250	3,010	3,024	3,200	3,444
New Mexico	434	483	750	1,400	851	1,021	1,147
Arizona	80	47	77	128	70	98	112
Utah	1,064	1,037	1,085	1,119	600	1,300	817
Nevada	36	24	35	56	35	74	42
Idaho	3,420	4,500	3,900	5,600	2,178	6,029	4,200
Washington	21,502	29,062	25,775	33,000	22,000	29,550	34,030
Oregon	4,158	6,667	6,300	8,000	6,500	5,400	8,036
California	6,000	6,500	7,850	10,500	8,903	6,016	10,350
United States	223,677	99,002	202,702	202,842	171,250	172,389	246,460

*From U. S. Department of Agriculture Yearbook.

TABLE 11.—Estimated Commercial Production by States, 1916-1926*

(Thousands of bushels—i. e., 000 omitted)

State	1916	1917	1918	1919	1920	1921
Maine	1,275	1,200	687	2,025	690	1,971
New Hampshire	486	360	366	561	510	330
Vermont	1,038	405	315	609	570	348
Massachusetts	900	675	900	1,005	1,125	516
Rhode Island	39	33	60	195	225	24
Connecticut	312	300	324	357	645	210
New York	20,790	7,140	17,850	8,925	19,500	9,900
New Jersey	1,119	1,224	1,542	1,368	2,544	396
Pennsylvania	4,191	2,733	3,348	2,277	4,641	663
Delaware	207	558	558	465	647	42
Maryland	651	768	945	531	1,197	60
Virginia	5,985	4,950	5,298	4,959	5,964	240
West Virginia	3,813	2,106	3,276	1,944	4,020	390
North Carolina	654	600	552	276	750	75
Georgia	291	360	351	105	318	174
Ohio	2,163	1,596	2,706	840	4,335	1,080
Indiana	786	1,302	798	411	1,626	327
Illinois	1,698	4,662	2,511	2,136	4,107	1,191
Michigan	4,242	1,545	4,485	3,150	9,501	3,624
Wisconsin	315	372	342	324	483	192
Minnesota	126	150	120	183	234	192
Iowa	330	750	303	633	1,260	75
Missouri	2,025	3,384	2,205	3,030	2,772	90
South Dakota	15	15	9	9	15	.....
Nebraska	426	675	216	540	330	51
Kansas	1,680	1,950	999	1,377	858	87
Kentucky	471	429	324	171	654	93
Tennessee	441	450	654	204	612	135
Alabama	57	72	78	27	60	45
Texas	60	69	33	111	63	63
Oklahoma	81	162	51	129	87	63
Arkansas	735	1,206	723	3,300	2,172	48
Montana	207	222	225	420	384	525
Colorado	1,101	2,103	1,581	2,484	2,208	2,436
New Mexico	177	525	351	792	324	369
Arizona	51	48	45	45	30	18
Utah	9	552	489	363	588	594
Nevada	.....	.....	.....	.....	.....	.....
Idaho	45	2,718	336	3,024	2,268	4,077
Washington	10,401	13,860	12,888	21,501	17,202	24,900
Oregon	2,250	2,139	2,013	4,071	2,496	5,001
California	3,630	3,522	3,381	3,600	3,690	4,056
United States	75,273	67,890	74,229	78,477	101,715	64,671

*From U. S. Department of Agriculture Yearbook.

TABLE 11.—Estimated Commercial Production by States, 1916-1926*—Continued

(Thousands of bushels—i. e., 000 omitted)

State	1922	1923	1924	1925	1926
Maine	696	1,440	1,980	1,935	1,350
New Hampshire	357	450	876	711	762
Vermont	384	267	480	510	465
Massachusetts	1,383	1,800	2,025	1,965	2,640
Rhode Island	60	240	192	171	237
				900	1,050
Connecticut	324	600	855		
New York	18,000	12,600	11,214	18,750	19,500
New Jersey	1,656	1,410	1,836	1,821	2,832
Pennsylvania	3,648	3,798	2,340	3,033	5,388
Delaware	1,140	1,020	930	1,140	1,980
Maryland	840	1,380	942	972	1,800
Virginia	4,200	5,850	7,560	4,320	10,152
West Virginia	2,643	4,200	2,400	2,247	5,100
North Carolina	708	300	921	480	1,035
Georgia	285	180	360	180	456
Ohio	1,824	3,099	2,082	2,034	3,018
Indiana	831	900	435	600	864
Illinois	4,350	4,200	3,300	3,645	3,750
Michigan	5,097	6,354	3,000	5,100	4,467
Wisconsin	303	408	294	471	465
Minnesota	123	183	114	114	171
Iowa	660	870	450	240	402
Missouri	3,750	2,550	1,764	1,938	1,857
South Dakota	12	9			
Nebraska	390	309	360	195	528
Kansas	1,638	1,200	1,032	855	930
Kentucky	507	210	486	210	501
Tennessee	285	90	318	123	375
Alabama	54	36			
Texas	45	45			
Oklahoma	114	126	162	87	93
Arkansas	1,560	1,968	2,160	1,950	1,500
Montana	345	390	210	42	255
Colorado	3,102	2,409	2,418	2,850	2,907
New Mexico	450	945	567	780	573
Arizona	27	42	21	30	33
Utah	594	780	360	900	480
Nevada	3				
Idaho	3,450	4,800	1,800	5,250	2,775
Washington	22,023	28,800	18,825	26,010	25,650
Oregon	3,780	5,250	4,650	3,888	5,100
California	4,197	6,300	4,470	3,291	6,144
United States	95,838	107,808	84,189	99,738	117,285

*From U. S. Department of Agriculture Yearbook.

TABLE 12.—Apple Trees in Ohio by Counties, 1925

County	Trees not of bearing age†	Trees of bearing age†	Total number of trees†	Ratio non-bearing to total trees	Number in commercial orchards*	Percent in commercial orchards
Adams	14,085	51,227	65,312	.22	7,315	11.2
Allen	7,519	37,430	44,949	.17	.....	.....
Ashland	10,996	40,143	51,139	.21	1,820	3.6
Ashtabula	51,029	89,123	140,152	.36	59,343	42.3
Athens	32,401	98,637	131,038	.24	52,338	39.9
Auglaize	6,478	38,262	44,740	.14	.....	.....
Belmont	52,687	102,923	155,610	.34	4,895	3.1
Brown	13,879	36,169	50,048	.28	.....	.....
Butler	6,699	13,113	19,812	.34	.....	.....
Carroll	18,462	58,831	77,293	.24	2,900	3.7
Champaign	3,915	34,080	37,995	.10	.....	.....
Clark	4,481	27,832	32,313	.14	.....	.....
Clermont	46,277	92,932	139,209	.33	23,816	17.1
Clinton	5,666	23,181	28,847	.20	.....	.....
Columbiana	104,672	140,836	245,508	.42	69,910	28.5
Coshocton	18,166	78,939	97,105	.19	2,455	2.5
Crawford	8,784	47,880	56,664	.16	.....	.....
Cuyahoga	38,782	63,740	102,522	.38	.....	.....
Darke	7,699	55,266	62,965	.12	.....	.....
Defiance	3,896	29,182	33,078	.12	.....	.....
Delaware	25,353	54,547	79,900	.32	41,084	51.4
Erie	38,332	51,855	90,187	.43	68,272	75.7
Fairfield	28,467	73,988	102,455	.28	17,415	17.0
Fayette	1,630	9,903	11,533	.14	.....	.....
Franklin	19,165	57,472	76,637	.25	8,337	10.9
Fulton	9,013	36,702	45,715	.20	1,600	3.5
Gallia	49,897	154,575	204,472	.24	162,510	79.5
Geauga	30,596	60,984	91,580	.33	54,279	59.2
Greene	8,030	28,567	36,597	.22	.....	.....
Guernsey	23,081	77,797	100,878	.23	1,375	1.4
Hamilton	44,394	47,594	91,988	.48	9,450	10.3
Hancock	10,622	43,502	54,124	.20	.....	.....
Hardin	3,342	32,381	35,723	.09	.....	.....
Harrison	9,501	44,832	54,333	.17	.....	.....
Henry	6,078	28,862	34,940	.17	.....	.....
Highland	11,267	38,108	49,375	.23	.....	.....
Hocking	15,358	38,121	53,479	.29	8,048	15.0
Holmes	11,658	46,142	57,800	.20	1,000	1.7
Huron	18,343	43,898	62,241	.29	9,361	15.0
Jackson	59,892	100,771	160,663	.37	101,880	63.4
Jefferson	24,654	58,927	83,581	.29	9,719	11 6
Knox	9,603	39,549	49,152	.19	6,832	13.9
Lake	49,778	69,306	119,084	.42	75,508	63.4
Lawrence	154,069	415,188	569,257	.27	212,916	37.4
Licking	28,394	88,986	117,380	.24	.....	.....

*From Special Bulletin "Ohio Commercial Orchards and Vineyards," Ohio Department of Agriculture.

†From Agricultural Census of 1925.

TABLE 12.—Apple Trees in Ohio by Counties, 1925—Continued

County	Trees not of bearing age†	Trees of bearing age†	Total number of trees†	Ratio of non-bearing to total trees	Number in commercial orchards*	Percent in commercial orchards
Logan	4,456	33,565	38,021	.12		
Lorain	59,547	75,086	134,633	.44	16,019	11.9
Lucas	18,001	37,690	55,691	.32	8,063	14.5
Madison	1,377	12,914	14,291	.10		
Mahoning	62,004	73,533	135,537	.45	49,755	36.7
Marion	5,258	22,737	27,995	.19		
Medina	23,727	59,310	83,037	.29	2,205	2.6
Meigs	35,112	120,381	155,493	.22	43,566	28.0
Mercer	6,501	49,771	56,272	.11		
Miami	6,200	34,671	40,871	.15		
Monroe	9,283	65,143	74,426	.12		
Montgomery	18,073	45,948	64,021	.28		
Morgan	7,636	50,264	57,900	.13	6,820	11.8
Morrow	7,671	34,705	42,376	.18		
Muskingum	25,647	88,865	114,512	.22	10,505	9.2
Noble	10,284	53,917	64,201	.16		
Ottawa	46,571	83,333	129,904	.36	77,079	59.3
Paulding	2,032	13,043	15,075	.13		
Perry	13,689	46,614	60,303	.23		
Pickaway	4,500	16,948	21,448	.21		
Pike	23,149	57,652	80,801	.29	19,516	24.1
Portage	29,198	66,022	95,220	.31	10,016	10.5
Preble	13,314	37,868	51,182	.26		
Putnam	4,955	39,365	44,320	.11		
Richland	13,954	59,756	73,710	.19	13,716	18.6
Ross	42,493	102,637	145,130	.29	55,042	37.9
Sandusky	27,492	59,599	87,091	.32	12,260	14.1
Scioto	64,743	100,404	165,147	.39	30,565	18.5
Seneca	13,536	51,252	64,788	.21		
Shelby	5,543	33,227	38,770	.14		
		126,168				
Stark	56,972		183,140	.31	8,315	4.5
Summit	49,367	53,063	102,430	.48	1,967	1.9
Trumbull	21,621	75,848	97,469	.22	7,156	7.3
Tuscarawas	26,607	85,861	112,468	.24	7,457	6.6
Union	7,159	26,174	33,333	.21	7,200	21.6
		33,869				
Van Wert	3,669		37,538	.10		
Vinton	14,973	55,248	70,221	.21	15,693	22.3
Warren	7,393	22,601	29,994	.25		
Washington	70,371	152,516	222,887	.31	57,302	25.7
Wayne	40,734	87,089	127,823	.32	14,668	11.5
Williams	5,957	28,883	34,840	.17		
Wood	10,335	50,749	61,084	.17		
Wyandot	7,144	27,517	34,661	.21		
State	2,075,338	5,354,089	7,429,427	.28	1,489,263	20.0

*From Special Bulletin "Ohio Commercial Orchards and Vineyards," Ohio Department of Agriculture.

†From Agricultural Census of 1925.

TABLE 13.—Age of Trees in Commercial Apple Orchards in Ohio*

Counties	Summer varieties						Winter varieties					
	Under 3 yr.		3 to 10 yr.		Over 10 yr.		Under 3 yr.		3 to 10 yr.		Over 10 yr.	
	Trees	Per-cent	Trees	Per-cent	Trees	Per-cent	Trees	Per-cent	Trees	Per-cent	Trees	Per-cent
Adams	.....	.....	15	7	200	93	.....	.....	4,300	61	2,800	39
Ashland	.....	.....	140	88	20	12	.....	.....	983	59	677	41
Ashtabula	5,926	42	5,813	41	2,479	17	12,865	29	27,204	60	5,056	11
Athens	82	4	271	12	1,858	84	4,169	8	13,233	27	32,725	65
Belmont	120	18	140	21	406	61	232	4	2,013	48	1,984	48
Carroll	100	77	30	23	.....	.....	1,200	43	1,570	57	.....	.....
Clermont	588	15	1,297	33	2,101	52	5,063	26	5,656	28	9,111	46
Columbiana	1,482	24	4,073	54	1,370	22	25,654	40	14,499	23	22,832	37
Coshocton	.....	.....	25	50	25	50	.....	.....	625	26	1,780	74
Delaware	65	2	1,712	48	1,809	50	2,490	7	11,546	31	23,462	62
Erie	2,693	27	3,560	36	3,718	37	9,153	16	16,010	27	33,138	57
Fairfield	12	1	263	28	653	71	3,678	22	5,047	31	7,762	47
Franklin	39	2	130	6	1,874	92	275	4	411	7	5,608	89
Fulton	.....	.....	.....	.....	1,600	100	.....	.....	.....	.....	.....	.....
Gallia	262	1	9,109	51	8,502	48	1,346	1	48,290	32	95,001	67
Geauga	.....	.....	.....	.....	2,365	100	929	2	358	1	50,627	97
Guernsey	.....	.....	5	4	110	96	750	60	.....	.....	510	40
Hamilton	324	21	456	29	780	50	1,764	22	1,831	23	4,295	55
Hocking	.....	.....	170	29	413	71	1,250	17	2,585	35	3,630	48
Holmes	.....	.....	.....	.....	.....	.....	1,000	100	.....	.....	.....	.....
Huron	110	14	547	68	150	18	1,512	18	3,851	45	3,191	37
Jackson	705	24	885	31	1,335	45	18,859	21	41,216	46	38,880	33
Jefferson	.....	.....	271	34	525	66	350	4	2,399	27	6,174	69
Knox	.....	.....	.....	.....	180	100	160	2	1,472	22	5,020	76
Lake	5,515	27	9,512	47	5,149	26	13,839	25	19,205	35	22,288	40
Lawrence	1,937	12	5,475	35	8,237	53	14,182	7	52,974	27	130,111	66
Lorain	1,360	49	855	31	545	20	2,460	18	3,150	24	7,649	58
Lucas	.....	.....	1,265	59	888	41	.....	.....	1,740	29	4,170	71
Mahoning	1,579	28	1,592	29	2,403	43	18,303	41	10,950	25	14,928	34
Medina	150	100	.....	.....	.....	.....	630	30	425	21	1,000	49
Meigs	252	7	110	4	2,640	89	5,633	13	7,904	20	27,027	67
Morgan	10	7	25	19	99	74	51	1	1,600	24	5,035	75
Muskingum	13	2	547	80	120	18	776	8	5,678	58	3 371	34
Ottawa	772	10	4,298	53	3,023	37	14,868	21	25,998	38	28,120	41
Pike	110	25	115	26	220	49	2,876	15	4,579	24	11,616	61
Portage	160	17	200	21	600	62	1,600	18	2,496	27	4,960	55
Richland	500	27	933	50	422	23	625	5	2,911	25	8,325	70
Ross	445	5	3,766	42	4,685	53	7,764	17	9,720	21	28,662	62
Sandusky	630	23	1,640	61	440	16	690	7	4,690	49	4,170	44
Scioto	302	27	168	16	637	57	5,276	18	14,585	49	9,597	33
Stark	40	4	325	36	550	60	1,034	14	1,696	23	4,670	63
Summit	360	58	250	41	5	1	360	27	950	70	42	3
Trumbull	.....	.....	1,400	75	472	25	.....	.....	40	1	5,244	99
Tuscarawas	172	24	230	32	317	44	1,070	16	2,365	35	3,303	49
Union	700	35	.....	.....	1,325	65	500	10	.....	.....	4,675	90
Vinton	250	48	50	10	218	42	1,050	7	4,880	32	9,245	61
Washington	192	9	922	47	856	44	10,842	20	14,069	25	30,421	55
Wayne	200	12	200	12	1,230	76	800	6	4,008	31	8,230	63
State	28,157	18	62,790	40	67,554	42	197,928	15	401,712	30	731,122	55

*From Special Bulletin, "Ohio Commercial Orchards and Vineyards," Ohio Department of Agriculture.

TABLE 14.—Apples: United States Exports and Imports, 1901-1927

Year ending June 30	Exports	Year ending June 30	Exports	Imports
	*Bu.**		*Bu.*	*Bu.**
1901	2,652,000	1915	7,056,000	....
1902	1,380,000	1916	4,398,000	....
1903	4,968,000	1917	5,220,000	.....
1804	6,054,000	1918	1,905,000	.....
1905	4,500,000	1919	4,728,000	.....
1906	3,627,000	1920	3,153,000	....
1907	4,617,000	1921	7,995,000	.....
1908	3,150,000	1922	3,282,000	153,000†
1909	2,688,000	1923	5,270,000	131,000
1910	2,766,000	1924	12,294,000	106,000
1911	5,163,000	1925	9,663,000	85,422‡
1912	4,368,000	1926	11,017,000	54,774‡
1913	6,450,000	1927	21,293,000	....
1914	4,521,000	.....	....	....

*Barrels converted into bushels on the basis of 1 barrel equivalent to 3 bushels.
†Beginning Sept. 22, 1922; apple imports not reported separately prior to that date.
‡Calendar year.

TABLE 15.—Cold Storage Holdings of Apples in Commercial Storages in Ohio*, 1919-1926

(Thousands, i. e., 000 omitted)

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov	Dec.
1919												
Barrels	101	75	51	28	12	5	.....	.....	.....	14	72	82
Boxes	75	56	40	22	9	2	.....	.....	.....	5	82	173
1920												
Barrels	83	61	38	20	8	4	1	.....	1	7	78	127
Boxes	186	139	94	69	22	13	3	1	.....	1	21	69
1921												
Barrels	123	99	72	47	23	12	4	2	1	16	52	56
Boxes	94	77	58	55	39	40	19	6	7	7	118	274
1922												
Barrels	47	36	27	19	12	6	2	1	3	17	108	137
Boxes	237	193	134	81	38	18	7	2	6	8	63	113
1923												
Barrels	118	85	56	36	16	5	.....	.....	.....	7	113	152
Boxes	129	98	64	52	35	14	.....	.....	.....	14	139	236
1924												
Barrels	145	125	101	81	56	23	.....	.....	2	7	74	112
Boxes	198	134	87	78	61	6	.....	.....	.....	3	55	92
1925												
Barrels	104	81	59	34	12	4	.....	.....	.....	14	94	127
Boxes	78	70	47	29	17	5	.....	.....	.....	3	83	120
1926												
Barrels	119	100	76	49	22	8	.....	.....	.....	5	73	114
Boxes	91	69	52	31	19	11	.....	.....	4	11	73	93

*Reported by U. S. Bureau of Agricultural Economics.

TABLE 16.—Apples: Freight Rates From Representative Shipping Points to Four Ohio Cities*

(In dollars per hundred pounds)

From	To Cleveland	To Cincinnati	To Columbus	To Toledo
Watsonville, California	1.50	1.50	1.50	1.50
Sebastopol, California	1.50	1.50	1.50	1.50
Nampa, Idaho	1.50	1.50	1.50	1.50
Fruitland, Idaho	1.50	1.50	1.50	1.50
Hood River, Oregon	1.50	1.50	1.50	1.50
Medford, Oregon	1.50	1.50	1.50	1.50
Wenatchee, Washington	1.50	1.50	1.50	1.50
Yakima, Washington	1.50	1.50	1.50	1.50
Clarksville, Missouri	.54½	.48½	.51½	.51½
Marionville, Missouri	.59	.53	.56	.56
Hillview, Illinois	.36	.32	.34	.33
Neoga, Illinois	.33	.27	.29	.30½
St. Joe, Indiana	.24	.25	.23½	.17½
Vincennes, Indiana	.32	.25	.28½	.30½
Fennville, Michigan	.29½	.30	.30½	.25½
Ludington, Michigan	.34	.34½	.34½	.30
Lockport, New York	.25	.33	.29	.28
Hilton, New York	.27	.34½	.31	.31
Albion, New York	.27	.34½	.31	.31
Chambersburg, Pennsylvania	.37	.46	.41	.41
Fayetteville, Pennsylvania	.37	.46	.41	.41
Trenton, Tennessee	.77	.58	.77	.77
Martinsburg, West Virginia	.37	.46	.41	.41
Charleston, West Virginia	.28½	.25½	.24	.28½
Winchester Virginia	.37	.46	.41	.41
Mt. Jackson, Virginia	.40½	.46	.41	.41
Hancock, Maryland	.37	.46	.41	.41
Hagerstown, Maryland	.37	.46	.41	.41
Wyoming, Delaware	.40½	.49	.44	.44
Bridgeville, Delaware	.40½	.49	.44	.44
Belfast, Maine	.40	.49	.44	.44
South Paris, Maine	.40	.49	.44	.44

*Through courtesy of W. G. Pennell, division freight agent, C. C. C. & St. L. Railroad, Columbus, Ohio. These rates are subject to change and the reader is cautioned against their use in determining freight charges.

TABLE 17.—APPLES: Freight Rates from Representative Ohio Shipping Points to Various Cities in Which Ohio Apples Have Been Sold*

(In dollars per hundred pounds)

To	From Torch Hill	From New Waterford	From Gallipolis	From Marietta	From Little Hocking	From Port Clinton	From Frankfort	From Oak Hill	From Greenford
Houston, Texas	1.18	1.18	1.12½	1.18	1.18	1.12½	1.09	1.12½	1.18
New Orleans, Louisiana	.63	.63	.60½	.63	.63	.63	.57½	.57½	.63
Birmingham, Alabama	.90½	.93½	.89½	.90½	.90½	.91	.83½	.86½	.93½
Tampa, Florida	1.12	1.15	1 10½	1.12	1.12	1.12½	1.05	1.08	1.15
Jacksonville, Florida	.97½	1.00½	.96	.97½	.97½	.98	.90½	.93½	1.00½
Atlanta, Georgia	.90½	.93½	.89	.90½	.90½	.91	.83½	.86½	.93½
Memphis, Tennessee	.47½	.47½	.45	.47½	.47½	.47½	.42½	.42½	.47½
Lexington, Kentucky	.42½	.45½	.41	.42½	.42½	.43	.35½	.38½	.45½
Louisville, Kentucky	.31½	.33	.30½	.31½	.31½	.31½	.28	.29	.33
Kansas City, Missouri	.66½	.68½	.66	.66½	.66½	.65½	.63½	.64½	.68½
St. Louis, Missouri	.36	.38	.35½	.36	.36	.35	.33	.34	.38
Evansville, Indiana	.33	.35½	.32	.32	.33	.33	.30	.31	.35½
Terre Haute, Indiana	.31	.32	.30½	.31	.31	.29	.27	.29	.32
Indianapolis, Indiana	.29	.30	.28	.29	.29	.27	.24	.27	.30
Chicago, Illinois	.33	.32	.33	.33	.33	.28	.30	.32	.32
Minneapolis, Minnesota	.60	.57	.60	.60	.60	.54½	.57	.60	.57
Milwaukee, Wisconsin	.36	.35	.36	.36	.36	.31	.33	.35	.35
Detroit, Michigan	.28½	.26½	.28½	.28½	.28½	.19	.26½	.28½	.26½
Akron, Ohio	.23½	.17	.24	.23	.23½	.20	.25	.26½	.16½
Cincinnati, Ohio	.25½	.28½	.24	.25½	.25½	.26	.18½	.21½	.28½
Cleveland, Ohio	.26	.18½	.26½	.25½	.26	.18	.25½	.27	.17½
Columbus, Ohio	.20½	.25	.20½	.20½	.20½	.21	.16½	.20½	.25
Dayton, Ohio	.25	.21½	.23½	.25	.25	.23½	.17	.21½	.27
Toledo, Ohio	.26½	.24	.27	.26½	.26½	.14½	.25	.26½	.24
Buffalo, New York	.30½	.25	.32	.30½	.30½	.27½	.31	.33	.25
Syracuse, New York	.34½	.....	.37	.32	.34½	.33½	.37	.37	.28
Pittsburgh, Pennsylvania	.23½	.16½	.27	.23½	.23½	.26	.27½	.27½	.17½
Philadelphia, Pennsylvania	.42	.....	.44½	.40	.42	.42	.44½	.44½	.35½
New York, New York	.44	.....	.46½	.42	.44	.44	.46½	.46½	.37½
Washington, D. C.	.41	.....	.43½	.39	.41	.41	.43½	.43½	.34½
Newark, New Jersey	.44	.....	.46½	.42	.44	.44	.46½	.46½	.37½
Providence, Rhode Island	.47	.....	.49½	.45	.47	.47	.49½	.49½	.40½
Boston, Massachusetts	.47	.....	.49½	.45	47	.47	.49½	.49½	.40½

*Through courtesy of W. G. Pennell, division freight agent, C. C. C. & St. L. Railroad, Columbus, Ohio. See note Table 16.
Torch Hill—Athens Co., New Waterford—Columbiana Co., Gallipolis—Gallia Co., Marietta and Little Hocking—Washington Co., Port Clinton—Ottawa Co., Frankfort—Ross Co., Oak Hill—Jackson Co., Greenford—Mahoning Co,

TABLE 18.—Apples: Number of States Originating Carlot Shipments to 66 Cities in 1926

Destination	Number of states	Destination	Number of states
Akron, Ohio*	15	Nashville, Tennessee*	18
Albany, New York*	9	Newark, New Jersey	11
Atlanta, Georgia	15	New Haven, Connecticut*	15
Baltimore, Maryland	12	New Orleans, Louisiana	20
Birmingham, Alabama	20	New York, New York	21
Boston, Massachusetts	22	Norfolk, Virginia*	7
Bridgeport, Connecticut*	11	Oklahoma City, Oklahoma*	12
Buffalo, New York	14	Omaha, Nebraska	13
Chicago, Illinois	25	Peoria, Illinois*	13
Cincinnati, Ohio	17	Philadelphia, Pennsylvania	12
Cleveland, Ohio	19	Pittsburgh, Pennsylvania	19
Columbus, Ohio	14	Portland, Maine*	9
Dallas, Texas	11	Portland, Oregon	4
Dayton, Ohio*	19	Providence, Rhode Island	15
Denver, Colorado	8	Richmond, Virginia*	8
Des Moines, Iowa*	11	Rochester, New York*	5
Detroit, Michigan	20	St. Louis, Missouri	14
Duluth, Minnesota*	17	St. Paul, Minnesota	14
El Paso, Texas*	4	Salt Lake City, Utah	4
Evansville, Indiana*	8	San Antonio, Texas*	8
Fort Worth, Texas	10	San Francisco, California	4
Grand Rapids, Michigan*	2	Seattle, Washington	3
Hartford, Connecticut*	7	Shreveport, Louisiana*	8
Houston, Texas*	13	Sioux City, Iowa*	11
Indianapolis, Indiana	19	Spokane, Washington	3
Jacksonville, Florida*	19	Springfield, Massachusetts*	12
Kansas City, Missouri	19	Syracuse, New York*	10
Lexington, Kentucky*	17	Tampa, Florida†	19
Los Angeles, California	6	Terre Haute, Indiana*	13
Louisville, Kentucky	15	Toledo, Ohio	18
Memphis, Tennessee	16	Washington, D. C.	13
Milwaukee, Wisconsin	21	Worcester, Massachusetts*	4
Minneapolis, Minnesota	16	Youngstown, Ohio*	13

*8 months, beginning May 1.
†7 months, beginning June 1.

TABLE 19.—Carlot Shipments of Apples From Eighteen Leading Apple-Growing States, 1918-1926

State	Crop movement season*									
	1918	1919	1920	1921	1922	1923	1924	1925	1926	9-year av.
	Cars	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*
Washington	16,232	27,169	21,627	32,961	28,295	37,660	25,156	35,046	34,729	28,764
New York	22,900	10,286	33,860	17,735	29,966	19,750	16,631	29,498	21,643	22,474
Virginia	4,227	7,075	8,762	323	6,975	9,340	13,080	7,502	18,973	8,473
Michigan	2,862	3,435	6,212	5,992	6,015	8,402	3,443	6,008	4,329	5,189
California	3,473	4,153	4,503	5,055	4,966	6,475	4,891	2,531	5,084	4,570
Oregon	2,246	5,443	3,170	6,543	3,893	6,402	5,515	4,702	6,422	4,926
Illinois	2,676	2,935	3,471	445	4,840	4,695	5,867	6,561	6,149	4,182
Pennsylvania	1,794	1,266	3,402	226	2,038	3,746	1,706	2,486	4,985	2,405
Idaho	536	3,943	2,881	5,811	4,222	7,016	2,223	7,485	3,677	4,199
West Virginia	2,919	2,849	4,880	801	2,242	6,715	3,762	3,927	7,393	3,943
Colorado	1,984	3,225	2,861	3,886	3,385	2,625	2,404	3,193	2,877	2,938
Missouri	1,167	2,155	1,725	10	3,079	3,542	2,939	3,056	2,015	2,188
Ohio	448	255	976	615	424	947	1,046	1,022	1,739	830
New Jersey	936	737	856	179	447	398	130	441	340	496
Arkansas	1,065	4,553	2,666	6	2,620	2,372	3,451	3,187	1,842	2,418
Massachusetts	252	407	627	159	286	256	587	302	477	373
Maine	257	2,343	414	4,306	278	737	2,115	1,320	660	1,381
Kansas	398	535	738	62	1,083	1,390	1,294	1,165	675	816
Other states	3,258	4,271	5,649	3,199	7,213	8,737	7,604	8,472	9,803	6,467
United States	69,630	87,035	109,280	88,314	112,267	131,205	103,844	127,904	133,812	107,032

*Crop movement season extends from June 1 of one year to June 1 of the following year.

TABLE 20.—Carlot Shipments of Apples From Ohio, 1918-1925

Month	Crop movement season*								5-year average 1921—1925	
	1918	1919	1920	1921	1922	1923	1924	1925		
	Cars	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Pct.*
June	1	0	0	0	7	0	2	1	2	0.3
July	17	0	25	1	38	19	30	22	22	2.7
August	16	0	16	3	7	13	37	29	18	2.2
September	58	3	43	186	65	68	68	93	96	11.9
October	244	225	499	352	222	491	461	434	392	48.5
November	44	16	269	35	61	202	264	184	149	18.4
December	17	3	22	20	5	45	66	33	34	4.2
January	22	2	18	7	0	26	34	41	22	2.7
February	21	3	30	8	4	34	38	52	27	3.3
March	8	2	43	2	8	25	34	43	22	2.7
April	0	1	11	0	7	18	10	57	18	2.2
May	0	0	0	1	0	6	3	25	7	.9
Total	448	255	976	615	424	947	1,047	1,014	809	100

*Crop movement season extends from June 1 of one year to June 1 of the following year.

TABLE 21.—Carlot Unloads of Ohio Apples in Important Markets, 1918-1926

City	1918	1919	1920	1921	1922	1923	1924	1925	1926
	Cars	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*
Akron, Ohio									5†
Atlanta, Georgia						14	8		2
Birmingham, Alabama						5			
Boston, Massachusetts						6	1	1	3
Buffalo, New York						1	8	2	3
Chicago, Illinois	27	6	18	4	8	14	2	9	2
Cincinnati, Ohio	141	14	78	7	5	35	20	17	54
Cleveland, Ohio	81	32	66	21	40	61	32	46	32
Columbus, Ohio						81	144	153	229
Dayton, Ohio									135†
Detroit, Michigan	14	11	1	1			2	3	32
Evansville, Indiana									1†
Houston, Texas									2†
Indianapolis, Indiana						5	7	16	12
Jacksonville, Florida									2†
Kansas City, Missouri	2		2						
Lexington, Kentucky									2†
Louisville, Kentucky						56	57	68	30
Memphis, Tennessee						7	4	21	10
Milwaukee, Wisconsin						2	2	2	8
Minneapolis, Minnesota		2							
Newark, New Jersey						3			
New Orleans, Louisiana							1	1	3
New York, New York	1	2	1					1	
Philadelphia, Pennsylvania		4	2			1			
Pittsburgh, Pennsylvania	67	63	29	130	15	26	46	14	17
Providence, Rhode Island						1	1	2	
St. Louis, Missouri	3						1		
Syracuse, New York									1†
Tampa, Florida									1†
Terre Haute, Indiana									2†
Toledo, Ohio						*	28	25	29
Washington D. C.	1					1		1	1
Total unloads reported	337	134	197	163	68	319	364	382	618
Total shipments reported	448	255	976	615	424	947	1046	1022	1361
Percentage of shipments, destinations known	75.2	52.5	20.2	26.5	16.0	33.7	34.8	37.4	45.4

*Origin of shipments to Toledo unknown. (595 cars of apples reported).
†Reported for last 8 months of 1926 only.
1918-1922—Reports from 12 cities.
1923-1925—Reports from 36 cities.
Since May 1, 1926—Reports from 66 cities.

TABLE 22.—Carlot Unloads of Apples in Cincinnati by Months, 1918-1926*

Month	1918	1919	1920	1921	1922	1923	1924	1925	1926
	Cars	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*
January	18	102	99	125	101	127	153	94	94
February	46	101	143	208	149	130	216	131	129
March	76	51	120	153	97	161	216	84	156
April	61	48	97	114	71	100	144	54	109
May	46	18	79	112	69	53	75	53	92
June	19	6	35	52	39	32	81	44	56
July	19	18	29	47	8	49	21	66	42
August	43	125	43	24	31	84	11	73	16
September	116	159	130	155	98	148	81	158	77
October	294	376	263	361	210	333	226	252	184
November	259	239	346	260	219	279	188	184	141
December	133	207	233	99	165	163	119	102	83
Total	1130	1450	1617	1810	1257	1659	1531	1295	1179

*Reported by U. S. Bureau of Agricultural Economics.

TABLE 23.—Carlot Unloads of Apples in Cincinnati by State of Origin, 1918-1926*

Origin	1918	1919	1920	1921	1922	1923	1924	1925	1926
	Cars	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*
Alabama	.....	.....	3	.....	.....	1	.....	1	.....
Arkansas	.....	72	.....	.....	.....	.....	.....	.....	.....
California	8	31	16	13	4	8	1	.....	1
Colorado	.....	6	.....	1	2	1	.....	4	.....
Delaware	3	6	.....	2	1	14	.....	32	.....
Florida	.....	.....	5†	.....	.....	.....	.....	.....	.....
Georgia	4	.....	7	8	5	2	6	2	10
Idaho	6	61	17	104	25	36	8	50	16
Illinois	23	37	27	25	12	86	38	53	42
Indiana	25	4	9	2	1	5	19	16	19
Iowa	.....	1	.....	.....	.....	.....	.....	.....	.....
Kentucky	.....	2	3	1	.....	.....	.....	.....	.....
Maine	32	135	19	145	9	6	77	14	.....
Maryland	1	3	18	3	4	9	13	4	3
Massachusetts	.....	24	11	1	.....	.....	.....	.....	.....
Michigan	77	143	97	224	40	278	77	117	33
Minnesota	.....	.....	1	.....	2	.....	.....	.....	.....
Mississippi	.....	1	.....	.....	.....	.....	.....	.....	.....
Missouri	1	23	8	1	1	5	8	7	6
Montana	.....	2	.....	.....	.....	.....	.....	.....	.....
Nebraska	.....	1	.....	.....	.....	.....	.....	.....	.....
New Hampshire	.....	21	.....	6	.....	.....	4	9	.....
New Jersey	.....	.....	2	1	.....	.....	.....	15	.....
New Mexico	.....	.....	.....	.....	.....	2	.....	2	.....
New York	431	445	737	697	652	457	585	531	496
North Carolina	.....	1	.....	.....	.....	.....	.....	.....	.....
Ohio	141	14	78	7	5	35	20	17	54
Oregon	.....	9	21	45	46	55	14	22	8
Pennsylvania	9	3	12	7	.....	27	1	17	3
Tennessee	24	.....	24	1	11	8	26	17	26
Utah	4	1	.....	10	.....	1	.....	1	1
Vermont	.....	1	.....	.....	.....	.....	.....	.....	.....
Virginia	110	88	84	48	5	44	87	71	15
Washington	167	132	369	414	424	519	478	234	335
West Virginia	58	73	39	37	7	54	68	41	56
Wisconsin	.....	4	1	.....	.....	2	.....	.....	.....
Unknown	4	104	8	.....	.....	.....	1	18	55
Imports	2	2	1	7	1	4	.....	.....	.....
Total	1130	1450	1617	1810	1257	1659	1531	1295	1179

*Reported by U. S. Bureau of Agricultural Economics. †Probably reconsignments.

TABLE 24.—Carlot Unloads of Apples in Cleveland by Months, 1918-1926*

Month	1918	1919	1920	1921	1922	1923	1924	1925	1926
	Cars	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*
January	22	114	95	149	88	159	102	95	137
February	78	90	139	155	127	138	173	116	145
March	97	68	157	188	130	164	142	109	194
April	80	38	113	106	85	144	130	108	128
May	23	44	92	85	84	103	65	93	125
June	19	7	30	32	57	47	58	75	104
July	65	53	93	9	120	103	80	113	122
August	36	63	77	19	126	110	75	77	72
September	47	87	91	40	118	113	127	110	103
October	308	327	278	169	438	370	224	336	267
November	210	304	274	107	307	299	269	230	271
December	207	207	259	125	221	111	169	108	86
Total	1192	1402	1698	1184	1901	1861	1614	1570	1754

*Reported by U. S. Bureau of Agricultural Economics.

TABLE 25.—Carlot Unloads of Apples in Cleveland by State of Origin, 1918-1926*

Origin	1918	1919	1920	1921	1922	1923	1924	1925	1926
	Cars	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*
Alabama							1		
Arkansas		18	1				1		
California	3	11	3	3	16	53	7	5	32
Colorado	5	30	1	5	2	3			
Delaware	23	20	24		31	31	11	36	18
Georgia	1	1			2		2		3
Idaho	4	48	19	22	14	25	4	19	22
Illinois	32	36	46	4	45	44	28	42	41
Indiana	3	1	3		8	3	6	6	16
Iowa				1					
Kentucky	2				1		1		3
Maine	3	30	6	17	5		12	2	
Maryland	18	30	18		16	25	10	10	16
Massachusetts		29	4	2				2	
Michigan	38	85	43	22	30	256	16	43	24
Minnesota		1		1	2	1			
Mississippi					1				
Missouri	3	11	1	1	4		14	4	4
Nebraska	1						1		
New Hampshire			2						
New Jersey					2	2	1	2	
New Mexico		3							
New York	459	479	758	662	1200	610	660	788	723
Ohio	81	32	66	21	40	61	32	46	32
Oregon	3	17	22	23	9	17	15	6	23
Pennsylvania	58	56	63	9	11	21	14	3	20
Tennessee	12	2	17		20	5	14	3	11
Utah	1	1		2	1			6	
Virginia	40	42	72	5	25	21	57	16	42
Washington	288	309	407	369	358	531	613	486	615
West Virginia	67	71	78	3	48	89	65	42	106
Wisconsin	2	4	1	1	1				
Wyoming			1	1					
Unknown	45	33	40	4	9	63	23	3	3
Imports		2	2	6			6		
Total	1192	1402	1698	1184	1901	1861	1614	1570	1754

*Reported by U. S. Bureau of Agricultural Economics.

TABLE 26.—Carlot Unloads of Apples in Columbus and Toledo by Months, 1923-1926*

Month	Columbus				Toledo			
	1923	1924	1925	1926	1923	1924	1925	1926
	Cars	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*
January	37	30	26	18	23	12	33	12
February	60	57	14	15	78	27	13	20
March	35	30	26	24	91	23	30	43
April	22	20	11	23	57	35	22	36
May	23	13	2	18	31	13	11	30
June	2	15	7	12	11	15	4	11
July	13	6	6	15	17	16	15	22
August	4	7	5	7	24	7	8	2
September	23	43	53	33	20	19	11	11
October	134	158	182	273	114	62	60	41
November	83	124	83	119	97	63	79	96
December	22	46	24	23	32	19	9	14
Total	458	549	439	580	595†	311	295	338

*Reported by U. S. Bureau of Agricultural Economics.
†Not reported by states of origin.

TABLE 27.—Carlot Unloads of Apples in Columbus and Toledo by State of Origin, 1923-1926*

Origin	Columbus			
	1923	1924	1925	1926
Arkansas			3	1
California	7	1		
Colorado		2	1	
Delaware	4		1	6
Georgia			2	
Idaho	19	7	21	5
Illinois	6	7	9	4
Indiana	3	1		7
Kansas	3			
Kentucky		2		
Maine		1		
Maryland	5	5		4
Michigan	10	4	5	
Minnesota	1			
Missouri	1		1	1
Nebraska	4	1		
New York	86	90	136	121
Ohio	81	144	153	229
Oklahoma		1		
Oregon	17	7	1	10
Pennsylvania	4	2	5	
Tennessee		8		4
Virginia	16	8	6	4
Washington	158	94	51	82
West Virginia	26	145	40	97
Wisconsin	1	2		
Unknown	6	17	4	5
Imports				
Total	458	549	439	580

	Toledo		
	1924	1925	1926
California			1
Delaware	4	2	2
Idaho	2	6	1
Illinois	5	14	13
Indiana	5		3
Kentucky			2
Maine	1		
Maryland	6		1
Massachusetts		1	
Michigan	61	72	98
Minnesota			1
Missouri	5	1	2
New Jersey	1		
New York	90	101	77
Ohio	28	25	29
Oregon	1		1
Pennsylvania		2	
Tennessee	2		1
Virginia	12	2	2
Washington	70	60	91
West Virginia	10	5	4
Wisconsin			2
Unknown	8	4	7
Imports			
Total	311	295	338

*Reported by U. S. Bureau of Agricultural Economics.

TABLE 28.—Carlot Unloads of Apples in Akron, Dayton, and Youngstown by Months for 8 Months During 1926, Beginning May 1*

Month	Akron	Dayton	Youngstown
May	23	22	11
June	8	14	12
July	12	17	15
August	15	21	6
September	11	50	4
October	57	88	14
November	40	82	13
December	13	20	6
Total	179	314	81

*Reported by U. S. Bureau of Agricultural Economics.

TABLE 29.—Carlot Unloads of Apples in Akron, Dayton, and Youngstown by State of Origin for 8 Months During 1926, Beginning May 1*

Origin	Akron	Dayton	Youngstown
California	2	5	5
Delaware	8		10
Georgia	1	1	
Idaho	2	12	3
Illinois	9	6	3
Indiana	3	10	
Kansas		1	
Kentucky		2	
Maine			1
Maryland	6	2	4
Michigan	4	8	1
Minnesota		1	
Missouri			1
New York	81	63	13
Ohio	5	135	
Oregon	4	6	3
Pennsylvania	4	1	
Tennessee		2	1
Virginia	1	6	
Washington	39	44	34
West Virginia	10	3	2
Wisconsin		3	
Unknown		3	
Imports			
Total	179	314	81

*Reported by U. S. Bureau of Agricultural Economics.

TABLE 30.—Carload Shipments of Ohio Apples for Calendar Years 1920-1926*

County and shipping point	1920	1921	1922	1923	1924	1925	1926
	Cars	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*
Athens	82	18	68	86	101	102	91
Coolville	31	11	31	34	43	36	35
Stewart	11	1	20	9	3	6	9
Torch Hill	32	3	9	39	21	29	33
Others	8	3	8	4	34	31	14
Columbiana	39	258	25	81	81	36	56
Columbiana	4	23	3	2	.....	.....	.....
East Liverpool	.....	.....	2	10	7	4	4
East Palestine	5	16	3	5	13	7	.....
Leetonia	2	12	1	1	1	.....	.....
Lisbon	3	30	.....	6	13	1	7
New Waterford	20	109	10	43	27	19	28
Rogers	2	38	3	8	17	2	5
Salem	3	14	1	1	.....	.....	.....
Others	.....	16	2	5	3	3	12
Coshocton: Cooperdale	16	2	.....	.....	5	2	3
Cuyahoga	38	79	23	69	.....	6	15
Berea	.....	.....	.....	.....	.....	3	.....
Cleveland	38	79	23	69	.....	3	15
Erie	2	39	3	.....	.....	2	1
Vermillion	2	18	1	.....	.....	.....	.....
Others	.....	21	2	.....	.....	2	1
Gallia	164	4	125	157	263	156	169
Gallipolis	162	4	121	155	257	153	153
Others	2	.....	4	2	6	3	16
Guernsey	16	1	.....	4	2	2	.....
Quaker City	13	1	.....	1	1	2	.....
Others	3	.....	.....	3	1	.....	.....
Huron	8	25	.....	12	9	3	3
Wakeman	8	19	.....	10	8	1	2
Others	.....	6	.....	2	1	2	1
Jackson	17	.....	4	71	46	98	81
Jackson	.....	.....	.....	26	8	16	16
Oak Hill	17	.....	4	45	37	66	62
Others	.....	.....	.....	.....	1	16	3
Lawrence	16	.....	.....	13	41	32	335
Coal Grove	12	.....	.....	10	12	3	10
Ironton	4	.....	.....	3	29	29	9
Huntington, W. Virginia	.....	.....	.....	.....	.....	.....	286
Guyandotte, W. Virginia	.....	.....	.....	.....	.....	.....	30

*Reported by U. S. Bureau of Agricultural Economics.

TABLE 30.—Carload Shipments of Ohio Apples for Calendar Years, 1920-1926—Continued

County and shipping point	1920	1921	1922	1923	1924	1925	1926
	Cars	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*
Lorain: Lorain and Elyria	14	2	.....	3	1	1	.....
Mahoning	3	65	3	.....	1	.....	.....
Garfield	3	11	1	.....	.....	.....	.....
Greenford	.....	45	2	.....	1	.....	.....
Others	.....	9	.....	.....	.....	.....	.....
Meigs	18	7	31	56	101	106	110
Carpenter	2	2	4	11	13	15	20
Dexter	3	2	5	11	5	18	29
Langsville	7	.....	13	10	30	.....	.....
Ruthland	6	.....	8	17	28	56	52
Others	.....	3	1	7	25	17	9
Ottawa	77	38	4	61	36	39	35
Gypsum	10	2	3	17	3	5	6
La Carne	2	.....	.....	13	7	3	13
Oak Harbor	30	8	.....	3	5	24	.....
Port Clinton	23	23	.....	20	18	4	11
Others	12	5	1	8	3	3	5
Portage	.....	17	.....	.....	.....	.....	.....
Atwater	.....	13	.....	.....	.....	.....	.....
Others	.....	4	.....	.....	.....	.....	.....
Richland	11	23	.....	7	.....	1	2
Ontario	4	20	.....	.....	.....	.....	.....
Others	7	3	.....	7	.....	1	2
Ross	53	.....	81	139	154	115	176
Chillicothe	22	.....	42	45	50	39	75
Frankfort	31	.....	35	76	73	61	55
Roxabel	.....	.....	3	11	19	9	31
Others	.....	.....	1	7	12	6	15
Sandusky	25	19	5	11	3	2	17
Clyde	15	7	3	8	3	2	14
Vickery	7	11	2	.....	.....	.....	1
Others	3	1	.....	3	.....	.....	2
Washington	320	81	37	139	145	153	200
Little Hocking	69	9	12	42	40	53	68
Lowell	29	.....	1	5	6	6	.....
Marietta	164	57	10	69	79	76	118
Vincent	.....	11	6	.....	.....	.....	.....
Waterford	47	4	8	16	15	15	14
Others	11	.....	.....	7	5	3	.....
Wayne	8	12	1	13	11	5	8
Other counties	33	31	14	32	42	54	59
State total	960	721	424	954	1042	915	1361

TABLE 31.—Apple Prices per Bushel at the Farm Dec. 1, 1910-1926*

Year	Ohio	New York	Michigan	United States
1910	$0.93	$1.00	$1.02	$0.89
1911	.54	.59	.70	.72
1912	.67	.50	.50	.66
1913	1.10	.95	.82	.98
1914	.63	.45	.49	.59
1915	.55	.78	.74	.69
1916	1.00	.75	.87	.91
1917	1.50	1.32	1.40	1.21
1918	1.53	1.12	1.15	1.32
1919	2.62	2.00	2.20	1.83
1920	1.15	.75	.77	1.14
1921	2.25	2.25	1.95	1.68
1922	1.30	.81	.88	.99
1923	1.05	1.20	.85	1.02
1924	1.31	1.08	1.14	1.18
1925	1.43	1.12	1.00	1.26
1926	.90	.55	.65	.73

*Reported by U. S. Bureau of Agricultural Economics.

TABLE 32.—Apples: Monthly Average Wholesale Prices per Barrel at New York* 1900-1925

Season beginning Sept. 1	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May
1900—1	$1.93	$1.97	$2.53	$3.10	$2.75	$3.15	$3.55	$3.81	$3.72
1901—2	3.41	3.62	4.78	5.00	5.00	5.06	4.90	4.25	4.40
1902—3	1.91	1.97	2.20	2.00	2.37	2.59	2.12	2.00	2.52
1903—4	2.69	2.43	2.94	2.71	2.90	2.97	3.06	3.02	2.91
1904—5	2.00	2.03	1.96	2.25	2.38	2.44	2.75	2.43	2.97
1905—6	3.18	2.97	3.75	3.75	3.75	4 50	4.82	6.06	5.59
1906—7	2.67	3.32	3.06	2.62	2.88	3.25	3.22	3.66	5.00
1907—8	3.72	3.56	3.55	3.34	3.46	3.52	3.22	3.00	2.60
1908—9	2.68	3.04	3.16	3.50	4.09	4.53	4.68	5.00	5.02
1909—10	3.72	4.22	3.81	3.69	3.82	3.21	3.28	3.48	3.71
1910—11	3.50	3.65	3.75	4.14	4.12	4.50	4.75	5.35	5.31
1911—12	2.55	3.06	2.71	3.12	2.84	2.96	3.39	4.20	4.00
1912—13	2.66	3.06	2.75	2.62	2.71	2.78	2.70	3.12	4.00
1913—14	3.29	4.43	3.75	4.00	4.06	4.79	4.75	5.34	5.14
1914—15	2.38	2.22	2.78	3.12	2.80	2.91	2.84	3.56	3.65
1915—16	2.38	2.95	3.12	3.06	3.05	3.19	3.33	3.12	2.96
1916—17	3.30	3.38	4.18	4.60	5.00	5.38	5.91	5.53	5.28
1917—18	4.08	4.44	4.94	5.10	5.00	4.88	4.92	5.75	6.75
1918—19	5.38	6.03	5.98	6.31	6.50	7.88	9.55	10.00	10.80
1919—20	6.12	7.81	7.55	7.50	7.00	8.06	7.50	7.08	9.25
1920—21	4.86	5.23	5.66	4.71	4.80	5.01	6.01	6.79	8.03
1921—22	8.09	7.72	7.18	7.82	8.23	8.62	7.64	7.44	.....
1922—23	3.53	4.63	4.94	4.67	5.08	5.09	5.37	6.03	6.75
1923—24	5.16	4.80	4.58	4.71	4.46	4.59	4.50	4.82	4.29
1924—25	4.53	5.82	6.51	6.21	7.16	7.84	7.82	7.80	.....
1925—26	4.79	5.93	5.63	5.92	5.81	5.65	5.69	5.82	6.02
Av. 1921—25	5.22	5.78	5.77	5.87	6.15	6.36	6.20	6.38	5.69
Relative (Sept.=100)	100	111	111	112	118	122	119	122	109
Av. period excl. 1917—20	3.37	3.67	3.80	3.91	3.95	4.18	4.22	4.43	4.20
Relative (Sept.=100)	100	109	113	116	117	124	125	131	125

*Since all varieties are included these figures can be considered only as an index of the changes in the level of apple prices.

TABLE 33.—Apples: Average Farm Prices per Bushel in Ohio by Months 1910-1926

Year	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1910	$1.06	$1.14	$1.26	$1.14	$1.20	$1.28	$1.04	$0.76	$0.80	$0.75	$0.90	$0.95
1911	1.10	1.15	1.20	1.30	1.30	1.38	.79	.54	.51	.48	.50	.58
1912	.70	.72	.75	.80	.90	1.10	.85	.65	.55	.60	.63	.71
1913	.75	.75	.90	.90	.98	.99	1.00	.98	.95	1.00	1.05	1.15
1914	1.20	1.40	1.50	1.60	1.75	1.60	.99	.75	.61	.60	.60	.65
												.58
1915	.70	.75	.73	.80	.85	1.02	.96	.56	.50	.52	.52	
1916	.70	.73	.73	.76	.80	1.10	.90	.85	.80	.88	.98	.95
1917	1.10	1.25	1.40	1.45	1.50	1.70	1.80	1.30	1.25	1.25	1.35	1.50
1918	1.50	1.60	1.50	1.50	1.85	1.50	1.65	1.35	1.33	1.50	1.50	1.60
1919	1.75	1.90	2.20	2.10	2.30	.....	2.70	2.50	2.10	2.30	2.40	2.70
1920	2.70	3.00	3.10	3.40	3.50	3.60	2.70	1.40	1.20	1.20	1.23	1.30
1921	1.37	1.38	1.50	1.40	1.79	2.07	2.00	2.00	1.90	2.20	2.32	2.43
1922	2.55	2.80	2.80	2.85	2.85	2.70	1.85	1.18	1.12	1.25	1.35	1.43
1923	1.59	1.67	1.88	2.10	2.00	3.00	2.20	1.30	1.04	1.07	1.08	1.11
1924	1.18	1.30	1.31	1.40	1.40	1.60	1.20	1.27	1.15	1.30	1.25	1.32
1925	1.50	1.60	1.67	1.64	1.55	2.00	1.93	1.25	1.15	1.30	1.40	1.48
1926	1.65	1.60	1.72	1.60	1.85	1.65	1.70	.95	.95	.90	.90	.90

TABLE 34.—Relative Wholesale Prices of Barreled Apples in New York by Months, 1910-1926

(Average Sept., 1910—May, 1915=100)

(Base Price=$3.56 per barrel)

Season beginning September 1	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May
1910—11	98	103	105	116	116	126	133	150	149
1911—12	72	86	76	88	80	83	95	118	112
1912—13	75	86	77	74	76	78	76	88	112
1913—14	92	124	105	112	114	135	133	150	144
1914—15	67	62	78	88	79	82	80	100	103
1915—16	67	83	88	86	86	90	94	88	83
1916—17	93	95	117	129	140	151	166	155	148
1917—18	115	125	139	143	140	137	138	162	198
1918—19	151	169	168	177	183	221	268	281	303
1919—20	172	219	212	211	197	226	211	199	260
1920—21	136	147	159	132	135	141	169	191	226
1921—22	227	217	202	220	231	242	215	209	.....
1922—23	99	130	139	131	143	143	151	169	190
1923—24	145	135	129	132	125	129	126	135	121
1924—25	127	163	183	174	201	220	220	219	... ...
1925—26	135	167	158	166	.....	.....	.....	.....	.....

TABLE 35.—Relative Farm Prices of Apples in the United States by Months, 1910-1926
(Average June, 1910—May, 1915=100)
(Base Price $0.917 per bushel)

Season beginning June 1	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May
1910—11	122	84	80	80	84	97	109	126	129	136	151	152
1911—12	148	103	80	77	72	80	94	101	108	113	125	140
1912—13	118	90	74	68	67	69	79	81	85	90	93	103
1913—14	110	94	82	83	93	103	113	121	134	141	150	160
1914—15	148	99	75	67	61	62	73	76	80	80	87	99
1915—16	98	85	67	63	72	79	84	94	99	99	103	106
1916—17	114	94	88	82	90	100	113	114	125	138	150	156
1917—18	160	136	110	105	115	127	139	145	151	156	157	170
1918—19	158	137	125	130	141	151	165	162	174	207	222	241
1919—20	244	205	176	167	191	202	233	235	250	258	276	312
1920—21	272	215	166	147	137	143	156	143	145	147	155	177
1921—22	190	180	180	187	214	235	245	200	225	225	212	263
1922—23	221	198	109	103	102	111	118	143	155	158	171	195
1923—24	206	182	132	118	124	125	124	132	136	141	141	143
1924—25	174	154	133	120	126	130	140	158	164	169	173	195
1925—26	220	173	143	123	131	139	150	160	160	152	156	162
1926—27	184	146	113	96	87	89	96	.....	.....	.....	.....	.....

TABLE 36.—Relative Purchasing Power of Farm Products by Groups in Terms of Non-agricultural Commodities*
(Aug., 1909—July, 1914=100)

Year	Grains	Fruits and vegetables	Meat animals	Dairy and poultry products	Cotton and cotton seed	All agricultural commodities	Apples
1910	102	89	101	99	111	101	100
1911	100	111	91	100	105	99	111
1912	105	109	95	102	86	99	92
1913	88	88	103	96	93	95	86
1914	106	102	115	104	87	105	106
1915	119	82	103	98	77	99	76
1916	91	89	86	76	86	85	68
1917	119	111	95	73	103	97	69
1918	121	86	108	86	130	107	76
1919	116	95	104	91	124	105	98
1920	96	103	72	82	103	85	85
1921	67	88	65	90	60	69	105
1922	62	90	67	80	93	74	99
1923	66	79	62	86	126	79	85
1924	80	77	68	85	131	83	82
1925	95	97	84	87	107	87	97
1926	80	117	91	88	76	84	86
Average	95	95	89	90	100	91	89

*These relatives are based on the price per unit at the farm. Since the volume sold is not considered, they are not necessarily proportionate to the values of the various commodities.

TABLE 37.—Apples: Carlot Unloads in New York by Months, 1918-1926*

Year	Jan	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1918	817	912	1052	797	402	121	614	862	1144	1512	1483	1620	11336
1919	1156	1326	1009	604	305	97	254	441	947	1506	1547	1409	10601
1920	1034	841	1100	265	512	168	204	427	1155	2007	2002	1343	11058
1921	1079	1006	1043	770	640	287	115	569	1254	2256	1805	1160	11984
1922	840	1079	940	665	529	210	246	688	1639	2340	1833	1755	12764
1923	1514	1145	1197	871	726	241	158	668	1609	3322	2479	1608	15538
1924	1580	1394	1378	1134	834	483	199	390	1166	2472	1844	1406	14280
1925	1053	1065	1049	1006	740	388	259	456	1922	2538	1918	1367	13761
1926	1089	1151	1217	1089	803	542	308	497	1527	2835	2337	1211	14606
Av.	1129	1102	1109	800	610	282	262	555	1374	2310	1916	1431	12881

*Reported by U. S Bureau of Agricultural Economics.